



## SEQUENCE LISTING

&lt;110&gt; Dalla-Favera, Riccardo

<120> ISOLATION OF FIVE NOVEL GENES ENCODING FOR NEW Fc RECEPTORS-TYPE  
MELANOMA INVOLVED IN THE PATHOGENESIS OF LYMPHOMA/MYELOMA

&lt;130&gt; 0575/58044-a

&lt;140&gt; 09/724,254

&lt;141&gt; 2000-11-28

&lt;160&gt; 44

&lt;170&gt; PatentIn version 3.1

&lt;210&gt; 1

&lt;211&gt; 515

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 1

Met Leu Leu Trp Ala Ser Leu Leu Ala Phe Ala Pro Val Cys Gly Gln  
1 5 10 15

Ser Ala Ala Ala His Lys Pro Val Ile Ser Val His Pro Pro Trp Thr  
20 25 30

Thr Phe Phe Lys Gly Glu Arg Val Thr Leu Thr Cys Asn Gly Phe Gln  
35 40 45

Phe Tyr Ala Thr Glu Lys Thr Thr Trp Tyr His Arg His Tyr Trp Gly  
50 55 60

Glu Lys Leu Thr Leu Thr Pro Gly Asn Thr Leu Glu Val Arg Glu Ser  
65 70 75 80

Gly Leu Tyr Arg Cys Gln Ala Arg Gly Ser Pro Arg Ser Asn Pro Val  
85 90 95

Arg Leu Leu Phe Ser Ser Asp Ser Leu Ile Leu Gln Ala Pro Tyr Ser  
100 105 110

Val Phe Glu Gly Asp Thr Leu Val Leu Arg Cys His Arg Arg Arg Lys  
115 120 125

Glu Lys Leu Thr Ala Val Lys Tyr Thr Trp Asn Gly Asn Ile Leu Ser  
130 135 140

Ile Ser Asn Lys Ser Trp Asp Leu Leu Ile Pro Gln Ala Ser Ser Asn

RECEIVED  
JUN 05 2002  
TECH CENTER 1600/2900

145		150		155		160
Asn Asn Gly Asn Tyr Arg Cys Ile Gly Tyr Gly Asp Glu Asn Asp Val						
		165		170		175
Phe Arg Ser Asn Phe Lys Ile Ile Lys Ile Gln Glu Leu Phe Pro His						
		180		185		190
Pro Glu Leu Lys Ala Thr Asp Ser Gln Pro Thr Glu Gly Asn Ser Val						
		195		200		205
Asn Leu Ser Cys Glu Thr Gln Leu Pro Pro Glu Arg Ser Asp Thr Pro						
		210		215		220
Leu His Phe Asn Phe Phe Arg Asp Gly Glu Val Ile Leu Ser Asp Trp						
		225		230		235
Ser Thr Tyr Pro Glu Leu Gln Leu Pro Thr Val Trp Arg Glu Asn Ser						
		245		250		255
Gly Ser Tyr Trp Cys Gly Ala Glu Thr Val Arg Gly Asn Ile His Lys						
		260		265		270
His Ser Pro Ser Leu Gln Ile His Val Gln Arg Ile Pro Val Ser Gly						
		275		280		285
Val Leu Leu Glu Thr Gln Pro Ser Gly Gly Gln Ala Val Glu Gly Glu						
		290		295		300
Met Leu Val Leu Val Cys Ser Val Ala Glu Gly Thr Gly Asp Thr Thr						
		305		310		315
Phe Ser Trp His Arg Glu Asp Met Gln Glu Ser Leu Gly Arg Lys Thr						
		325		330		335
Gln Arg Ser Leu Arg Ala Glu Leu Glu Leu Pro Ala Ile Arg Gln Ser						
		340		345		350
His Ala Gly Gly Tyr Tyr Cys Thr Ala Asp Asn Ser Tyr Gly Pro Val						
		355		360		365
Gln Ser Met Val Leu Asn Val Thr Val Arg Glu Thr Pro Gly Asn Arg						
		370		375		380

Asp Gly Leu Val Ala Ala Gly Ala Thr Gly Gly Leu Leu Ser Ala Leu  
385 390 395 400

Ile Leu Ala Val Ala Leu Leu Phe His Cys Trp Arg Arg Arg Lys Ser  
405 410 415

Gly Val Gly Phe Leu Gly Asp Glu Thr Arg Leu Pro Pro Ala Pro Gly  
420 425 430

Pro Gly Glu Ser Ser His Ser Ile Cys Pro Ala Gln Val Glu Leu Gln  
435 440 445

Ser Leu Tyr Val Asp Val His Pro Lys Lys Gly Asp Leu Val Tyr Ser  
450 455 460

Glu Ile Gln Thr Thr Gln Leu Gly Glu Glu Glu Glu Ala Asn Thr Ser  
465 470 475 480

Arg Thr Leu Leu Glu Asp Lys Asp Val Ser Val Val Tyr Ser Glu Val  
485 490 495

Lys Thr Gln His Pro Asp Asn Ser Ala Gly Lys Ile Ser Ser Lys Asp  
500 505 510

Glu Glu Ser  
515

<210> 2  
<211> 2499  
<212> DNA  
<213> Homo Sapiens

<400> 2  
ctcaatcagc tttatgcaga gaagaagctt actgagctca ctgctggtgc tgggtgtaggc 60  
aagtgcgtct ttggcaatct gggctgacct ggcttgcttc ctgagaactc cttctccaac 120  
cctggagcag gcttccatgc tgctgtgggc gtccttgctg gcctttgctc cagtctgtgg 180  
acaatctgca gctgcacaca aacctgtgat ttccgtccat cctccatgga ccacattctt 240  
caaaggagag agagtgactc tgacttgcaa tggatttcag ttctatgcaa cagagaaaac 300  
aacatgggat catcggcact actggggaga aaagttgacc ctgaccccag gaaacaccct 360  
cgaggttcgg gaatctggac tgtacagatg ccaggcccgg ggctccccac gaagtaacct 420  
tgtgcgcttg ctcttttctt cagactcctt aatcctgcag gcaccatatt ctgtgtttga 480  
aggtgacaca ttggttctga gatgccacag aagaaggaaa gagaaattga ctgctgtgaa 540

atatacttgg aatggaaaca ttctttccat ttctaataaa agctgggatc ttcttatccc	600
acaagcaagt tcaaataaca atggcaatta tcgatgcatt ggatatggag atgagaatga	660
tgtattttaga tcaaatttca aaataattaa aattcaagaa ctattttccac atccagagct	720
gaaagctaca gactctcagc ctacagaggg gaattctgta aacctgagct gtgaaacaca	780
gcttcctcca gagcggtcag acaccccaact tcacttcaac ttcttcagag atggcgaggt	840
catcctgtca gactggagca cgtacccgga actccagctc ccaaccgtct ggagagaaaa	900
ctcaggatcc tattggtgtg gtgctgaaac agtgaggggt aacatccaca agcacagtcc	960
ctcgctacag atccatgtgc agcggatccc tgtgtctggg gtgctcctgg agaccagcc	1020
ctcagggggc caggctgttg aaggggagat gctggtcctt gtctgctccg tggctgaagg	1080
cacaggggat accacattct cctggcaccc agaggacatg caggagagtc tggggaggaa	1140
aactcagcgt tccctgagag cagagctgga gctccctgcc atcagacaga gccatgcagg	1200
gggatactac tgtacagcag acaacagcta cgccctgtc cagagcatgg tgctgaatgt	1260
cactgtgaga gagacccag gcaacagaga tggccttgtc gccgcgggag ccactggagg	1320
gctgctcagt gctcttctcc tggctgtggc cctgctgttt cactgctggc gtcggaggaa	1380
gtcaggagtt ggtttcttgg gagacgaaac caggctccct cccgctccag gccagggaga	1440
gtcctcccat tccatctgcc ctgccagggt ggagcttcag tcgttgatat ttgatgtaca	1500
ccccaaaaag ggagatttgg tatactctga gatccagact actcagctgg gagaagaaga	1560
ggaagcta atacctcagga cacttctaga ggataaggat gtctcagttg tctactctga	1620
ggtaaagaca caacaccag ataactcagc tggaaagatc agctctaagg atgaagaaa	1680
ttaagagaat gaaaagttac gggaacgtcc tactcatgtg atttctccct tgtccaaagt	1740
cccaggccca gtgcagtcc tgcggcacct ggaatgatca actcattcca gctttctaat	1800
tcttctcatg catatgcatt cactcccagg aatactcatt cgtctactct gatgttggga	1860
tggaatggcc tctgaaagac ttacttaaaa tgaccaggat ccacagttaa gagaagacc	1920
tgtagtattt gctgtgggcc tgacctaatg cattccctag ggtctgcttt agagaagggg	1980
gataaagaga gagaaggact gttatgaaaa acagaagcac aaattttggt gaattgggat	2040
ttgcagagat gaaaaagact gggtgacctg gatctctgct taatacatct acaaccattg	2100
tctcactgga gactcacttg catcagtttg tttaactgtg agtggctgca caggcactgt	2160
gcaaacaatg aaaagccct tcacttctgc ctgcacagct tacactgtca ggattcagtt	2220
gcagattaaa gaacccatct ggaatggttt acagagagag gaatttaaaa gaggacatca	2280

gaagagctgg agatgcaagc tctaggctgc gcttccaaaa gcaaatgata attatgttaa 2340  
 tgtcattagt gacaaagatt tgcaacatta gagaaaagag acacaaatat aaaattaaaa 2400  
 acttaagtac caactctcca aaactaaatt tgaacttaaa atattagtat aaactcataa 2460  
 taaactctgc ctttaaataa aaaaaaaaaa aaaaaaaaaa 2499

<210> 3  
 <211> 592  
 <212> PRT  
 <213> Homo Sapiens

<400> 3

Met Leu Leu Trp Val Ile Leu Leu Val Leu Ala Pro Val Ser Gly Gln  
 1 5 10 15

Phe Ala Arg Thr Pro Arg Pro Ile Ile Phe Leu Gln Pro Pro Trp Thr  
 20 25 30

Thr Val Phe Gln Gly Glu Arg Val Thr Leu Thr Cys Lys Gly Phe Arg  
 35 40 45

Phe Tyr Ser Pro Gln Lys Thr Lys Trp Tyr His Arg Tyr Leu Gly Lys  
 50 55 60

Glu Ile Leu Arg Glu Thr Pro Asp Asn Ile Leu Glu Val Gln Glu Ser  
 65 70 75 80

Gly Glu Tyr Arg Cys Gln Ala Gln Gly Ser Pro Leu Ser Ser Pro Val  
 85 90 95

His Leu Asp Phe Ser Ser Ala Ser Leu Ile Leu Gln Ala Pro Leu Ser  
 100 105 110

Val Phe Glu Gly Asp Ser Val Val Leu Arg Cys Arg Ala Lys Ala Glu  
 115 120 125

Val Thr Leu Asn Asn Thr Ile Tyr Lys Asn Asp Asn Val Leu Ala Phe  
 130 135 140

Leu Asn Lys Arg Thr Asp Phe His Ile Pro His Ala Cys Leu Lys Asp  
 145 150 155 160

Asn Gly Ala Tyr Arg Cys Thr Gly Tyr Lys Glu Ser Cys Cys Pro Val  
 165 170 175

Ser Ser Asn Thr Val Lys Ile Gln Val Gln Glu Pro Phe Thr Arg Pro  
 180 185 190

Val Leu Arg Ala Ser Ser Phe Gln Pro Ile Ser Gly Asn Pro Val Thr  
 195 200 205

Leu Thr Cys Glu Thr Gln Leu Ser Leu Glu Arg Ser Asp Val Pro Leu  
 210 215 220

Arg Phe Arg Phe Phe Arg Asp Asp Gln Thr Leu Gly Leu Gly Trp Ser  
 225 230 235 240

Leu Ser Pro Asn Phe Gln Ile Thr Ala Met Trp Ser Lys Asp Ser Gly  
 245 250 255

Phe Tyr Trp Cys Lys Ala Ala Thr Met Pro His Ser Val Ile Ser Asp  
 260 265 270

Ser Pro Arg Ser Trp Ile Gln Val Gln Ile Pro Ala Ser His Pro Val  
 275 280 285

Leu Thr Leu Ser Pro Glu Lys Ala Leu Asn Phe Glu Gly Thr Lys Val  
 290 295 300

Thr Leu His Cys Glu Thr Gln Glu Asp Ser Leu Arg Thr Leu Tyr Arg  
 305 310 315 320

Phe Tyr His Glu Gly Val Pro Leu Arg His Lys Ser Val Arg Cys Glu  
 325 330 335

Arg Gly Ala Ser Ile Ser Phe Ser Leu Thr Thr Glu Asn Ser Gly Asn  
 340 345 350

Tyr Tyr Cys Thr Ala Asp Asn Gly Leu Gly Ala Lys Pro Ser Lys Ala  
 355 360 365

Val Ser Leu Ser Val Thr Val Pro Val Ser His Pro Val Leu Asn Leu  
 370 375 380

Ser Ser Pro Glu Asp Leu Ile Phe Glu Gly Ala Lys Val Thr Leu His  
 385 390 395 400

Cys Glu Ala Gln Arg Gly Ser Leu Pro Ile Leu Tyr Gln Phe His His  
 405 410 415

Glu Asp Ala Ala Leu Glu Arg Arg Ser Ala Asn Ser Ala Gly Gly Val  
 420 425 430

Ala Ile Ser Phe Ser Leu Thr Ala Glu His Ser Gly Asn Tyr Tyr Cys  
 435 440 445

Thr Ala Asp Asn Gly Phe Gly Pro Gln Arg Ser Lys Ala Val Ser Leu  
 450 455 460

Ser Ile Thr Val Pro Val Ser His Pro Val Leu Thr Leu Ser Ser Ala  
 465 470 475 480

Glu Ala Leu Thr Phe Glu Gly Ala Thr Val Thr Leu His Cys Glu Val  
 485 490 495

Gln Arg Gly Ser Pro Gln Ile Leu Tyr Gln Phe Tyr His Glu Asp Met  
 500 505 510

Pro Leu Val Ser Ser Ser Thr Pro Ser Val Gly Arg Val Ser Phe Ser  
 515 520 525

Phe Ser Leu Thr Glu Gly His Ser Gly Asn Tyr Tyr Cys Thr Ala Asp  
 530 535 540

Asn Gly Phe Gly Pro Gln Arg Ser Glu Val Val Ser Leu Phe Val Thr  
 545 550 555 560

Gly Lys Cys Trp Val Leu Ala Ser Lys Pro Pro Leu Ala Glu Phe Ser  
 565 570 575

Leu Thr His Ser Phe Lys Asn Leu Phe Ala Leu Ser Ser Phe Leu Pro  
 580 585 590

<210> 4  
 <211> 5308  
 <212> DNA  
 <213> Homo Sapiens

<400> 4  
 cggatgcagtgc tcttgactgt aagatcaagt ccaaacctgt tttggaattg aggaaacttc 60  
 tcttttgatc tcagcccttg gtggtccagg tcttcatgct gctgtgggtg atattactgg 120  
 tcttggtccc tgatcagtga cagtttgcaa ggacaccag gccattatt ttcctccagc 180  
 tctccatgga ccacagtctt ccaaggagag agagtgaccc tcacttgcaa gggatttcgc 240

tctactcacc acagaaaaca aaatggtacc atcggtacct tgggaaagaa atactaagag	300
aaaccccgaga caatatcctt gagttcagga atctggagag tacagatgcc aggccaggg	360
ctccccctctc agtagccctg tgcacttga tttttcttca gcttcgctga tcttgaagc	420
tccactttct gtgtttgaag gagactctgt ggttctgagg tgccgggcaa aggcggaagt	480
aacactgaat aatactattt acaagaatga taatgtcctg gcattcctta ataaaagaac	540
tgacttccat attcctcatg catgtctcaa ggacaatggg gcataatcgt gtactggata	600
taaggaaagt tgttgccctg tttcttccaa tacagtcaaa atccaagtcc aagagccatt	660
tacacgtcca gtgctgagag ccagctcctt ccagcccatc agcgggaacc cagtgaacct	720
gacctgtgag acccagctct ctctagagag gtcagatgtc ccgctccggt tccgcttctt	780
cagagatgac cagaccctgg gattaggctg gagtctctcc ccgaatttcc agattactgc	840
catgtggagt aaagattcag ggttctactg gtgtaaggca gcaacaatgc ctacacagct	900
catatctgac agccccgaga tcttggatac aggtgcagat ccttgcattc catctgtcc	960
tcactctcag cctgaaaag gctctgaatt ttgagggaac caagggtgaca cttactgtg	1020
aaaccagga agattctctg cgcactttgt acaggtttta tcatgagggt gtccccctga	1080
ggcacaagtc agtccgctgt gaaaggggag catccatcag cttctcactg actacagaga	1140
attcagggaa ctactactgc acagctgaca atggccttg cgccaagccc agtaaggctg	1200
tgagcctctc agtcaactgt cccgtgtctc atcctgtcct caacctcagc tctcctgagg	1260
acctgatttt tgaggagacc aaggtagcac ttactgtga agcccagaga ggttactcc	1320
ccatcctgta ccagtttcat catgaggatg ctgccctgga gcgtaggctg gccaaactctg	1380
caggaggagt ggccatcagc ttctctctga ctgcagagca ttcagggaac tactactgca	1440
cagctgacaa tggctttggc ccccagcgca gtaaggcggg gagcctctcc atcactgtcc	1500
ctgtgtctca tctgtctctc accctcagct ctgctgaggc cctgactttt gaaggagcca	1560
ctgtgacact tcaactgtga gtccagagag gttccccaca aatcctatac cagttttatc	1620
atgaggacat gccctgtgg agcagctcaa caccctctgt gggaagagtg tccttcagct	1680
tctctctgac tgaaggacat tcagggaatt actactgcac agctgacaat ggctttggtc	1740
cccagcgag tgaagtgggt ggtaagtgt gggttcttgc cagtcaccca ccctggctg	1800
agttctctct caccattcc tttaaaaatc tgtttgact gtccagtttc ctcccctaat	1860
caacttaatc cccttcttgg ctctctctc aactaactag ctggggtttt ccgtactcat	1920
aagtctggc tcagccagac ccctaaaaca gtcagtaga ttccccagct ttaccaaata	1980



gaatattttt attgtatttt ctctcatctt cttgtatggt ccaacagtac gccaatTTTT	2040
cttgatgcac ggagcgtgtc ctacttctct actgacattt acatattaac ttagctacaa	2100
gcacagtctt atagataaat attggtcaag accttaaatt ctccaaagga tttccaatct	2160
tatggtagat ttggagaaag ctgctggtga acaaaggggg aaatggctcc ctaggaacca	2220
actcctcaaa cttctggagt ttttatgac ccttgTTTT taacctgcta aaatcagtat	2280
cattttattg tattatttta aaaaaactat tgttgaagta tgacatacat tcaagaaacg	2340
tgtgcaaatt gtatgtgtac gatttgggtg ctttttagga gctaagttgc ttctgTTTT	2400
acttgaatct ttgtttatag aaactggggg aaagtttact ttcttttcag agaagccaaa	2460
tggtatgata gaaaaatctt gagcctgatg tgtcagacat gcccctagca taactgttg	2520
agtaaagagg ttatttttaa aatgtgaatg ttctgagact actccaaagt cagagccaaa	2580
tctactagga agcttctaga cttcactcat tctgcatccc attactatct ttttatccat	2640
gttttacttt cttctcatat tcagcagcat ctttaagctc tttattttct gtttcttgac	2700
tgtcaccctt aatgccagta gaatgtaagc ttcattgagaa cagaactgca tccatcttgg	2760
tcttcacaac atccctgtgc ctactcagtg tttggcacac agtaggtcct cagtcaacat	2820
ttgtaattta gtggacagat gatatgacaa gatgataaga ggggatttaa aaaaatcatc	2880
tagcaaagcc caagaggaaa aaaaaacaaag ctatttttaga aatgaaatac caatttgaag	2940
cagtaagaat agattggata tctttgaaaa ccattaattg aatgaagaac caatttgaga	3000
aaacaataca gaatgcaaag tagaaagata cagaaataaa ggcaaaagtt ataatatgga	3060
aatcagacaa tggatttgtc tgtatccagt tatgtggata attaaaatgg agaccctcag	3120
aaaattgaac cgaagagtaa aatgaaactc aaaaatgtag tagaaattgt tgggaagtaa	3180
agaaaacttg aatatgtaga tcagaacata tatgttgatg acgttattga ctttgagggt	3240
aaaaatatat atatgtgcct atgattatgg ggaaaaaagc agtcgtctca gaaagaaaaa	3300
catcaagtta gtcttagact ttgcagtgca ctcagtacca aagagttacc acacaaaggg	3360
agagtgggcc ttcaggagat gccgggctgg cctaacagct caggtgctcc taaactccga	3420
cacagagttc ctgctttggg tggatgcatt tctcaattgt catcagcctg gtggggctac	3480
tgcagtgtgc tgccaaatgg gacagcacac agcctgtgca catgggacat gtgatgggtc	3540
tccccacggg ggctgcattt cacactctc cacctgtctc aaactctaag gtcggcactt	3600
gacaccaagg taacttctct cctgctcatg tgtcagtgtc tacctgcccc agtaagtggc	3660
tttcatacac caagtccga agttcttccc atcctaacag aagtaaccca gcaagtcaag	3720
gccaggagga ccaggggtgc agacagaaca catactggaa cacaggaggt gctcaattac	3780

tatttgactg actgactgaa tgaatgaatg aatgaggaag aaaactgtgg gtaatcaaac	3840
tggcataaaa tccagtgcac tccctaggaa atccgggagg tattctggct tcctaagaaa	3900
caacggaaga gaaggagctt ggatgaagaa actgttcagc aagaagaagg gcttcttcac	3960
acttttatgt gcttgtggat cacctgagga tctgtgaaaa tacagatact gattcagtgg	4020
gtctgtgtag agcctgagac tgccattcta acatgttccc aggggatgct gatgctgctg	4080
gccctgggac tgcaactgcat gcatgtgaag ccctataggt ctcagcagag gcccatggag	4140
agggaatgtg tggctctggc tgcccagggc ccaactcggc tcacacggat cgtgctgctc	4200
cctggccagc ctttggccac agcaccacca gctgctgttg ctgagagagc ttcttctctg	4260
tgacatgttg gctttcatca gccaccctgg gaagcggaaa gtagctgcca ctatctttgt	4320
ttccccacct caggcctcac actttcccat gaaaagggtg aatgtatata acctgagccc	4380
tctccattca gagttgttct cccatctctg agcaatggga tgttctgttc cgcttttatg	4440
atatccatca catcttatct tgatctttgc tccagtgga ttgtacagtg atgactttta	4500
agccccacgg ccctgaaata aaatccttcc aagggcattg gaagctcact ccacctgaac	4560
catggctttt catgcttcca agtgtcaggc ccttgcccag atagacaggc ctgactctgc	4620
tgccccaacc tttcaaggag gaaaccagac acctgagaca ggagcctgta tgcagcccag	4680
tgcagccttg cagaggacaa ggctggaggc atttgtcatc actacagata tgcaactaaa	4740
atagacgtgg agcaagagaa atgcattccc accgaggccg ctttttttagg cctagttgaa	4800
agtcaagaag gacagcagca agcataggct caggattaaa gaaaaaaatc tgctcacagt	4860
ctgttctgga ggtcacatca ccaacaaagc tcacgcccta tgcagttctg agaagggtga	4920
ggcaccaggc tcaaaagagg aaatttagaa tttctcattg ggagagtaag gtacccccat	4980
cccagaatga taactgcaca gtggcagaac aaactccacc ctaatgtggg tggaccccat	5040
ccagtctgtt gaaggcctga atgtaacaaa agggcttatt cttcctcaag taagggggaa	5100
ctcctgcttt gggctgggac ataagttttt ctgctttcag acgcaaactg aaaaatggct	5160
cttcttgggt cttgagcttg ctggcatatg gactgaaaga aactatgcta ttggatctcc	5220
tggatctcca gcttctgac tgcagatctt gagatatgtc agcctctaca gtcacaagag	5280
ctaattcatt ctaataaacc aatctttc	5308

<210> 5  
 <211> 734  
 <212> PRT  
 <213> Homo Sapiens

<400> 5

Met Leu Leu Trp Leu Leu Leu Leu Ile Leu Thr Pro Gly Arg Glu Gln  
1 5 10 15

Ser Gly Val Ala Pro Lys Ala Val Leu Leu Leu Asn Pro Pro Trp Ser  
20 25 30

Thr Ala Phe Lys Gly Glu Lys Val Ala Leu Ile Cys Ser Ser Ile Ser  
35 40 45

His Ser Leu Ala Gln Gly Asp Thr Tyr Trp Tyr His Asp Glu Lys Leu  
50 55 60

Leu Lys Ile Lys His Asp Lys Ile Gln Ile Thr Glu Pro Gly Asn Tyr  
65 70 75 80

Gln Cys Lys Thr Arg Gly Ser Ser Leu Ser Asp Ala Val His Val Glu  
85 90 95

Phe Ser Pro Asp Trp Leu Ile Leu Gln Ala Leu His Pro Val Phe Glu  
100 105 110

Gly Asp Asn Val Ile Leu Arg Cys Gln Gly Lys Asp Asn Lys Asn Thr  
115 120 125

His Gln Lys Val Tyr Tyr Lys Asp Gly Lys Gln Leu Pro Asn Ser Tyr  
130 135 140

Asn Leu Glu Lys Ile Thr Val Asn Ser Val Ser Arg Asp Asn Ser Lys  
145 150 155 160

Tyr His Cys Thr Ala Tyr Arg Lys Phe Tyr Ile Leu Asp Ile Glu Val  
165 170 175

Thr Ser Lys Pro Leu Asn Ile Gln Val Gln Glu Leu Phe Leu His Pro  
180 185 190

Val Leu Arg Ala Ser Ser Ser Thr Pro Ile Glu Gly Ser Pro Met Thr  
195 200 205

Leu Thr Cys Glu Thr Gln Leu Ser Pro Gln Arg Pro Asp Val Gln Leu  
210 215 220

Gln Phe Ser Leu Phe Arg Asp Ser Gln Thr Leu Gly Leu Gly Trp Ser  
11

225		230		235		240
Arg Ser Pro Arg	Leu Gln Ile	Pro Ala Met	Trp Thr Glu	Asp Ser Gly		
	245		250		255	
Ser Tyr Trp Cys	Glu Val Glu	Thr Val Thr	His Ser Ile	Lys Lys Arg		
	260		265		270	
Ser Leu Arg Ser	Gln Ile Arg	Val Gln Arg	Val Pro Val	Ser Asn Val		
	275		280		285	
Asn Leu Glu Ile	Arg Pro Thr	Gly Gly Gln	Leu Ile Glu	Gly Glu Asn		
	290		295		300	
Met Val Leu Ile	Cys Ser Val	Ala Gln Gly	Ser Gly Thr	Val Thr Phe		
	305		310		315	
Ser Trp His Lys	Glu Gly Arg	Val Arg Ser	Leu Gly Arg	Lys Thr Gln		
	325		330		335	
Arg Ser Leu Leu	Ala Glu Leu	His Val Leu	Thr Val Lys	Glu Ser Asp		
	340		345		350	
Ala Gly Arg Tyr	Tyr Cys Ala	Ala Asp Asn	Val His Ser	Pro Ile Leu		
	355		360		365	
Ser Thr Trp Ile	Arg Val Thr	Val Arg Ile	Pro Val Ser	His Pro Val		
	370		375		380	
Leu Thr Phe Arg	Ala Pro Arg	Ala His Thr	Val Val Gly	Asp Leu Leu		
	385		390		395	
Glu Leu His Cys	Glu Ser Leu	Arg Gly Ser	Pro Pro Ile	Leu Tyr Arg		
	405		410		415	
Phe Tyr His Glu	Asp Val Thr	Leu Gly Asn	Ser Ser Ala	Pro Ser Gly		
	420		425		430	
Gly Gly Ala Ser	Phe Asn Leu	Ser Leu Thr	Ala Glu His	Ser Gly Asn		
	435		440		445	
Tyr Ser Cys Asp	Ala Asp Asn	Gly Leu Gly	Ala Gln His	Ser His Gly		
	450		455		460	

Val Ser Leu Arg Val Thr Val Pro Val Ser Arg Pro Val Leu Thr Leu  
 465 470 475 480

Arg Ala Pro Gly Ala Gln Ala Val Val Gly Asp Leu Leu Glu Leu His  
 485 490 495

Cys Glu Ser Leu Arg Gly Ser Phe Pro Ile Leu Tyr Trp Phe Tyr His  
 500 505 510

Glu Asp Asp Thr Leu Gly Asn Ile Ser Ala His Ser Gly Gly Gly Ala  
 515 520 525

Ser Phe Asn Leu Ser Leu Thr Thr Glu His Ser Gly Asn Tyr Ser Cys  
 530 535 540

Glu Ala Asp Asn Gly Leu Gly Ala Gln His Ser Lys Val Val Thr Leu  
 545 550 555 560

Asn Val Thr Gly Thr Ser Arg Asn Arg Thr Gly Leu Thr Ala Ala Gly  
 565 570 575

Ile Thr Gly Leu Val Leu Ser Ile Leu Val Leu Ala Ala Ala Ala Ala  
 580 585 590

Leu Leu His Tyr Ala Arg Ala Arg Arg Lys Pro Gly Gly Leu Ser Ala  
 595 600 605

Thr Gly Thr Ser Ser His Ser Pro Ser Glu Cys Gln Glu Pro Ser Ser  
 610 615 620

Ser Arg Pro Ser Arg Ile Asp Pro Gln Glu Pro Thr His Ser Lys Pro  
 625 630 635 640

Leu Ala Pro Met Glu Leu Glu Pro Met Tyr Ser Asn Val Asn Pro Gly  
 645 650 655

Asp Ser Asn Pro Ile Tyr Ser Gln Ile Trp Ser Ile Gln His Thr Lys  
 660 665 670

Glu Asn Ser Ala Asn Cys Pro Met Met His Gln Glu His Glu Glu Leu  
 675 680 685

Thr Val Leu Tyr Ser Glu Leu Lys Lys Thr His Pro Asp Asp Ser Ala  
 690 695 700

Gly Glu Ala Ser Ser Arg Gly Arg Ala His Glu Glu Asp Asp Glu Glu  
 705 710 715 720

Asn Tyr Glu Asn Val Pro Arg Val Leu Leu Ala Ser Asp His  
 725 730

<210> 6  
 <211> 2970  
 <212> DNA  
 <213> Homo Sapiens

<400> 6  
 agtgaagggg tttcccatat gaaaaatata gaaagaatta tttgaatact agcaaatata 60  
 caacttgata tttctagaga acccaggcac agtcttggag acattactcc tgagagactg 120  
 cagctgatgg aagatgagcc ccaacttcta aaaatgtatc actaccggga ttgagatata 180  
 aacagcattt aggaaggtct catctgagta gcagcttctt gccctccttc ttggagataa 240  
 gtcgggcttt tggtagagaca gactttccca accctctgcc cggccggtgc ccatgcttct 300  
 gtggctgctg ctgctgatcc tgactcctgg aagagaacaa tcaggggtgg ccccaaaagc 360  
 tgtacttctc ctcaatcctc catgggccac agccttcaaa ggagaaaaag tggctctcat 420  
 atgcagcagc atatcacatt ccttagccca gggagacaca tattggtatc acgatgagaa 480  
 gttgttgaaa ataaaacatg acaagatcca aattacagag cctggaaatt accaatgtaa 540  
 gacccgagga tcctccctca gaattacaga gcctggaaat taccaatgta agacccgagg 600  
 atcctccctc agacatcctg tctttgaagg agacaatgtc attctgagat gtcaggggaa 660  
 agacaacaaa aacactcatc aaaagggtta ctacaaggat ggaaaacagc ttcctaatag 720  
 ttataattta gagaagatca cagtgaattc agtctccagg gataatagca aatatcattg 780  
 tactgcttat aggaagtttt acatacttga cattgaagta acttcaaaac ccctaaatat 840  
 ccaagttcaa gagctgtttc tacatcctgt gctgagagcc agctcttcca cgcccataga 900  
 ggggagtgcc atgaccctga cctgtgagac ccagctctct ccacagaggc cagatgtcca 960  
 gctgcaattc tccctcttca gagatagcca gaccctcgga ttgggctgga gcagggtccc 1020  
 cagactccag atccctgcca tgtggactga agactcaggg tcttactggt gtgaggtgga 1080  
 gacagtgact cacagcatca aaaaaaggag cctgagatct cagatacgtg tacagagagt 1140  
 ccctgtgtct aatgtgaatc tagagatccg gcccaaccga gggcagctga ttgaaggaga 1200  
 aaatatggtc cttatgtgct cagtagccca gggttcaggg actgtcacat tctcctggca 1260  
 caaagaagga agagtaagaa gcctgggtag aaagaccag cgttccctgt tggcagagct 1320

gcatgttctc accgtgaagg agagtgatgc agggagatac tactgtgcag ctgataacgt	1380
tcacagcccc atcctcagca cgtggattcg agtcaccgtg agaattccgg tatctcacc	1440
tgtcctcacc ttcagggctc ccagggccca cactgtggtg ggggacctgc tggagcttca	1500
ctgtgagtc ctgagaggct ccccccgat cctgtaccga ttttatcatg aggatgtcac	1560
cctggggaac agctcagccc cctctggagg aggagcctcc ttcaacctct ctctgactgc	1620
agaacattct ggaaactact cctgtgatgc agacaatggc ctgggggccc agcacagtca	1680
tggagtgagt ctcagggtea cagttccggt gtctcgcccc gtctcacc	1740
tcagggctcc	
cggggcccag gctgtggtgg gggacctgct ggagcttcac tgtgagtccc tgagaggctc	1800
cttcccgatc ctgtactggt tttatcacga ggatgacacc ttggggaaca tctcgccca	1860
ctctggagga ggggcatcct tcaacctctc tctgactaca gaacattctg gaaactactc	1920
atgtgaggct gacaatggcc tgggggccc gcacagtaaa gtggtgacac tcaatgttac	1980
aggaacttcc aggaacagaa caggccttac cgctgcggga atcacggggc tgggtgctcag	2040
catcctcgtc cttgctgctg ctgctgctct gctgcattac gccaggggcc gaaggaaacc	2100
aggaggactt tctgccactg gaacatctag tcacagtcct agtgagtgtc aggagccttc	2160
ctcgtccagg ccttcaggga tagaccctca agagcccact cactctaaac cactagcccc	2220
aatggagctg gagccaatgt acagcaatgt aaatcctgga gatagcaacc cgattttattc	2280
ccagatctgg agcatccagc atacaaaaga aaactcagct aattgtccaa tgatgcatca	2340
agagcatgag gaacttacag tcctctattc agaactgaag aagacacacc cagacgactc	2400
tgcaggggag gctagcagca gaggcagggc ccatgaagaa gatgatgaag aaaactatga	2460
gaatgtacca cgtgtattac tggcctcaga ccactagccc cttaccaga gtggccaca	2520
ggaaacagcc tgcaccattt ttttttctgt tctctccaac cacacatcat ccatctctcc	2580
agactctgcc tcctacgagg ctgggctgca gggatatgtga ggctgagcaa aaggctctgca	2640
aatctccct gtgcctgatc tgtgtgttcc ccaggaagag agcaggcagc ctctgagcaa	2700
gcactgtgtt attttcacag tggagacacg tggcaaggca ggagggccct cagctcctag	2760
ggctgtcgaa tagaggagga gagagaaatg gtctagccag gggtacaagg gcacaatcat	2820
gaccatttga tccaagtgtg atcgaaagct gttaatgtgc tctctgtata aacaatttgc	2880
tccaaatatt ttgtttccct tttttgtgtg gctggtagtg gcattgctga tgttttgggtg	2940
tatatgctgt atccttgcta ccatattggg	2970

<210> 7  
<211> 508

<212> PRT

<213> Homo Sapiens

<400> 7

Met Leu Leu Trp Ser Leu Leu Val Ile Phe Asp Ala Val Thr Glu Gln  
1 5 10 15

Ala Asp Ser Leu Thr Leu Val Ala Pro Ser Ser Val Phe Glu Gly Asp  
20 25 30

Ser Ile Val Leu Lys Cys Gln Gly Glu Gln Asn Trp Lys Ile Gln Lys  
35 40 45

Met Ala Tyr His Lys Asp Asn Lys Glu Leu Ser Val Phe Lys Lys Phe  
50 55 60

Ser Asp Phe Leu Ile Gln Ser Ala Val Leu Ser Asp Ser Gly Asn Tyr  
65 70 75 80

Phe Cys Ser Thr Lys Gly Gln Leu Phe Leu Trp Asp Lys Thr Ser Asn  
85 90 95

Ile Val Lys Ile Lys Val Gln Glu Leu Phe Gln Arg Pro Val Leu Thr  
100 105 110

Ala Ser Ser Phe Gln Pro Ile Glu Gly Gly Pro Val Ser Leu Lys Cys  
115 120 125

Glu Thr Arg Leu Ser Pro Gln Arg Leu Asp Val Gln Leu Gln Phe Cys  
130 135 140

Phe Phe Arg Glu Asn Gln Val Leu Gly Ser Gly Trp Ser Ser Ser Pro  
145 150 155 160

Glu Leu Gln Ile Ser Ala Val Trp Ser Glu Asp Thr Gly Ser Tyr Trp  
165 170 175

Cys Lys Ala Glu Thr Val Thr His Arg Ile Arg Lys Gln Ser Leu Gln  
180 185 190

Ser Gln Ile His Val Gln Arg Ile Pro Ile Ser Asn Val Ser Leu Glu  
195 200 205

Ile Arg Ala Pro Gly Gly Gln Val Thr Glu Gly Gln Lys Leu Ile Leu  
210 215 220



Leu Cys Ser Val Ala Gly Gly Thr Gly Asn Val Thr Phe Ser Trp Tyr  
225 230 235 240

Arg Glu Ala Thr Gly Thr Ser Met Gly Lys Lys Thr Gln Arg Ser Leu  
245 250 255

Ser Ala Glu Leu Glu Ile Pro Ala Val Lys Glu Ser Asp Ala Gly Lys  
260 265 270

Tyr Tyr Cys Arg Ala Asp Asn Gly His Val Pro Ile Gln Ser Lys Val  
275 280 285

Val Asn Ile Pro Val Arg Ile Pro Val Ser Arg Pro Val Leu Thr Leu  
290 295 300

Arg Ser Pro Gly Ala Gln Ala Ala Val Gly Asp Leu Leu Glu Leu His  
305 310 315 320

Cys Glu Ala Leu Arg Gly Ser Pro Pro Ile Leu Tyr Gln Phe Tyr His  
325 330 335

Glu Asp Val Thr Leu Gly Asn Ser Ser Ala Pro Ser Gly Gly Gly Ala  
340 345 350

Ser Phe Asn Leu Ser Leu Thr Ala Glu His Ser Gly Asn Tyr Ser Cys  
355 360 365

Glu Ala Asn Asn Gly Leu Gly Ala Gln Cys Ser Glu Ala Val Pro Val  
370 375 380

Ser Ile Ser Gly Pro Asp Gly Tyr Arg Arg Asp Leu Met Thr Ala Gly  
385 390 395 400

Val Leu Trp Gly Leu Phe Gly Val Leu Gly Phe Thr Gly Val Ala Leu  
405 410 415

Leu Leu Tyr Ala Leu Phe His Lys Ile Ser Gly Glu Ser Ser Ala Thr  
420 425 430

Asn Glu Pro Arg Gly Ala Ser Arg Pro Asn Pro Gln Glu Phe Thr Tyr  
435 440 445

Ser Ser Pro Thr Pro Asp Met Glu Glu Leu Gln Pro Val Tyr Val Asn  
17

450	455	460
Val Gly Ser Val Asp Val Asp Val Val Tyr Ser Gln Val Trp Ser Met		
465	470	475 480
Gln Gln Pro Glu Ser Ser Ala Asn Ile Arg Thr Leu Leu Glu Asn Lys		
	485	490 495
Asp Ser Gln Val Ile Tyr Ser Ser Val Lys Lys Ser		
	500	505

<210> 8  
 <211> 2580  
 <212> DNA  
 <213> Homo Sapiens

<400> 8  
 tggtagaccaa gactacatct cttttcaaata agctggatta ggtcctcatg ctgctgtggt 60  
 cattgctggt catctttgat gcagtcactg aacaggcaga ttcgctgacc cttgtggcgc 120  
 cctcttctgt cttcgaagga gacagcatcg ttctgaaatg ccaggagaga cagaactgga 180  
 aaattcagaa gatggcttac cataaggata acaaagagtt atctgttttc aaaaaattct 240  
 cagatttcct tatccaaagt gcagttttaa gtgacagtgg taactatttc tgtagtacca 300  
 aaggacaact ctttctctgg gataaaactt caaatatagt aaagataaaa gtccaagagc 360  
 tctttcaacg tctgtgctg actgccagct ccttcagacc catcgaaggg ggtccagtga 420  
 gcctgaaatg tgagaccggg ctctctccac agagggtgga tgttcaactc cagttctgct 480  
 tcttcagaga aaaccaggtc ctggggtcag gctggagcag ctctccggag ctccagattt 540  
 ctgccgtgtg gactgaagac acagggtctt actggtgcaa ggcagaaacg gtgactcaca 600  
 ggatcagaaa acagagcctc caatcccaga ttcacgtgca gagaatcccc atctctaattg 660  
 taagcttgga gatccggggc cccgggggac aggtgactga aggacaaaaa ctgatcctgc 720  
 tctgctcagt ggctgggggt acaggaaatg tcacattctc ctggtacaga gaggccacag 780  
 gaaccagtat gggaaagaaa acccagcgtt ccctgtcagc agagctggag atcccagctg 840  
 tgaaagagag tgatgccggc aaatattact gtagagctga caacggccat gtgcctatcc 900  
 agagcaagggt ggtgaatatc cctgtgagaa ttccagtgtc tcgccctgtc ctcacctca 960  
 ggtctcctgg gggccaggct gcagtggggg acctgctgga gcttactgtg gaggccctga 1020  
 gaggtctctc cccaatcttg taccaatttt atcatgagga tgtcaccctt gggaacagct 1080  
 cgccccctc tggaggaggg gcctccttca acctctcttt gactgcagaa cattctggaa 1140

actactcctg tgaggccaac aacggcctgg gggcccagtg cagtgaggca gtgccagtct 1200  
 ccatctcagg acctgatggc tatagaagag acctcatgac agctggagtt ctctggggac 1260  
 tgtttggtgt ccttggtttc actggtgttg ctttgctgtt gtatgccttg ttccacaaga 1320  
 tatcaggaga aagttctgcc actaatgaac ccagaggggc ttccaggcca aatcctcaag 1380  
 agttcaccta ttcaagccca accccagaca tggaggagct gcagccagtg tatgtcaatg 1440  
 tgggctctgt agatgtggat gtggtttatt ctccaggtctg gagcatgcag cagccagaaa 1500  
 gctcagcaaa catcaggaca cttctggaga acaaggactc ccaagtcac tactcttctg 1560  
 tgaagaaatc ataacacttg gaggaatcag aaggggaagat caacagcaag gatggggcat 1620  
 cattaagact tgctataaaa ctttatgaaa atgcttgagg cttatcacct gccacagcca 1680  
 gaacgtgcct caggaggcac ctctgtcat ttttgcctg atgatgtttc ttctccaata 1740  
 tcttctttta cctatcaata ttcatgaac tgctgtaca tccagacact gtgcaaataa 1800  
 attatttctg ctaccttctc ttaagcaatc agtgtgtaaa gatttgaggg aagaatgaat 1860  
 aagagataca aggtctcacc ttcatctact gtgaagtgat gagaacagga cttgatagtg 1920  
 gtgtattaac ttatttatgt gctgctggat acagtttgt aatattttgt tgagaatttt 1980  
 tgcaaatatg ttcatggga atattggcct gaaattttct tttccactgt gtctctgcca 2040  
 gaatgtttgt atcaggctga tgctggcttc atagaatgag ttaggcagga gcccttcctc 2100  
 cttgattttt tggcatagtt tcagcaggat tgggtaccagt tattctttct gcactctgta 2160  
 gaattcagct atgaatccat ctggtctagg gcttttgtgt tgggtggtaa gttttttatt 2220  
 actaattcaa cttcagcgct tgatattggg ctaggagggg tttctgtctc ttcttggttc 2280  
 aatcttgga gattgtgtgt ttccaggaat ttagccgttt cctccagatt ttcttcttta 2340  
 tgtgcatcga cttgagtgt aacataactt atatgcaact ggaaaccaa aaatctgtgt 2400  
 gacttgcttt attgcagcat ttgttttatt ttggtagtct ggaactgaac ctgcaatac 2460  
 accaaagtat gcatatagtt gcaaaaatgt gatttttgac atagtaaata tgagtatttg 2520  
 caataaacta tgatattact tttgtaagta tatagaataa aatgtaaata atctataaaa 2580

<210> 9  
 <211> 429  
 <212> PRT  
 <213> Homo Sapiens

<400> 9

Met Leu Pro Arg Leu Leu Leu Ile Cys Ala Pro Leu Cys Glu Pro  
 1 5 10 15

Ala Glu Leu Phe Leu Ile Ala Ser Pro Ser His Pro Thr Glu Gly Ser  
 20 25 30

Pro Val Thr Leu Thr Cys Lys Met Pro Phe Leu Gln Ser Ser Asp Ala  
 35 40 45

Gln Phe Gln Phe Cys Phe Phe Arg Asp Thr Arg Ala Leu Gly Pro Gly  
 50 55 60

Trp Ser Ser Ser Pro Lys Leu Gln Ile Ala Ala Met Trp Lys Glu Asp  
 65 70 75 80

Thr Gly Ser Tyr Trp Cys Glu Ala Gln Thr Met Ala Ser Lys Val Leu  
 85 90 95

Arg Ser Arg Arg Ser Gln Ile Asn Val His Arg Val Pro Val Ala Asp  
 100 105 110

Val Ser Leu Glu Thr Gln Pro Pro Gly Gly Gln Val Met Glu Gly Asp  
 115 120 125

Arg Leu Val Leu Ile Cys Ser Val Ala Met Gly Thr Gly Asp Ile Thr  
 130 135 140

Phe Leu Trp Tyr Lys Gly Ala Val Gly Leu Asn Leu Gln Ser Lys Thr  
 145 150 155 160

Gln Arg Ser Leu Thr Ala Glu Tyr Glu Ile Pro Ser Val Arg Glu Ser  
 165 170 175

Asp Ala Glu Gln Tyr Tyr Cys Val Ala Glu Asn Gly Tyr Gly Pro Ser  
 180 185 190

Pro Ser Gly Leu Val Ser Ile Thr Val Arg Ile Pro Val Ser Arg Pro  
 195 200 205

Ile Leu Met Leu Arg Ala Pro Arg Ala Gln Ala Ala Val Glu Asp Val  
 210 215 220

Leu Glu Leu His Cys Glu Ala Leu Arg Gly Ser Pro Pro Ile Leu Tyr  
 225 230 235 240

Trp Phe Tyr His Glu Asp Ile Thr Leu Gly Ser Arg Ser Ala Pro Ser  
 245 250 255

20

Gly Gly Gly Ala Ser Phe Asn Leu Ser Leu Thr Glu Glu His Ser Gly  
 260 265 270

Asn Tyr Ser Cys Glu Ala Asn Asn Gly Leu Gly Ala Gln Arg Ser Glu  
 275 280 285

Ala Val Thr Leu Asn Phe Thr Val Pro Thr Gly Ala Arg Ser Asn His  
 290 295 300

Leu Thr Ser Gly Val Ile Glu Gly Leu Leu Ser Thr Leu Gly Pro Ala  
 305 310 315 320

Thr Val Ala Leu Leu Phe Cys Tyr Gly Leu Lys Arg Lys Ile Gly Arg  
 325 330 335

Arg Ser Ala Arg Asp Pro Leu Arg Ser Leu Pro Ser Pro Leu Pro Gln  
 340 345 350

Glu Phe Thr Tyr Leu Asn Ser Pro Thr Pro Gly Gln Leu Gln Pro Ile  
 355 360 365

Tyr Glu Asn Val Asn Val Val Ser Gly Asp Glu Val Tyr Ser Leu Ala  
 370 375 380

Tyr Tyr Asn Gln Pro Glu Gln Glu Ser Val Ala Ala Glu Thr Leu Gly  
 385 390 395 400

Thr His Met Glu Asp Lys Val Ser Leu Asp Ile Tyr Ser Arg Leu Arg  
 405 410 415

Lys Ala Asn Ile Thr Asp Val Asp Tyr Glu Asp Ala Met  
 420 425

<210> 10

<211> 2303

<212> DNA

<213> Homo Sapiens

<400> 10

gaggcatctc taggtacat ccttgacctg gtcctcatgc tgccgaggct gttgctgttg 60

atctgtgctc cactctgtga acctgccgag ctgtttttga tagccagccc ctcccatccc 120

acagagggga gccagtgac cctgacgtgt aagatgccct ttctacagag ttcagatgcc 180

cagttccagt tctgcttttt cagagacacc cgggccttgg gcccaggctg gagcagctcc 240

cccaagctcc agatcgctgc catgtggaaa gaagacacag ggtcatactg gtgcgaggca	300
cagacaatgg cgtccaaagt cttgaggagc aggagatccc agataaatgt gcacagggtc	360
cctgtcgctg atgtgagctt ggagactcag cccccaggag gacaggtgat ggaggagac	420
aggctgggcc tcactctgctc agttgctatg ggcacaggag acatcacctt cctttggtac	480
aaaggggctg taggtttaaa ccttcagtca aagaccagc gttcactgac agcagagtat	540
gagattcctt cagtgagga gagtgatgct gagcaatatt actgtgtagc tgaaaatggc	600
tatggtccca gcccagtggt gctggtgagc atcactgtca gaatcccgtt gtctcgccca	660
atcctcatgc tcagggtcc cagggcccag gctgcagtgg aggatgtgct ggagcttcac	720
tgtgaggccc tgagaggctc tcctccaatc ctgtactggt tttatcacga ggatatcacc	780
ctggggagca ggtcggtccc ctctggagga ggagcctct tcaacctttc cctgactgaa	840
gaacattctg gaaactactc ctgtgaggcc aacaatggcc tgggggccc ggcagtgag	900
gcggtgacac tcaacttcac agtgcctact gggggccagaa gcaatcatct tacctcagga	960
gtcattgagg ggctgctcag cacccttggt ccagccaccg tggccttatt attttgctac	1020
ggcctcaaaa gaaaaatagg aagacgttca gccagggatc cactcaggag ccttcccagc	1080
cctctacccc aagagttcac ctacctaac tcacctacc cagggcagct acagcctata	1140
tatgaaaatg tgaatgttgt aagtgggat gaggtttatt cactggcgta ctataaccag	1200
ccggagcagg aatcagtagc agcagaaacc ctggggacac atatggagga caaggtttcc	1260
ttagacatct attccaggct gaggaaagca aacattacag atgtggacta tgaagatgct	1320
atgtaagggt atggaagatt ctgctctttg aaaaccatcc atgaccccaa gcctcaggcc	1380
tgatatgttc ttcagagatc ctggggcatt agctttccag tatacctctt ctggatgcca	1440
ttctccatgg cactattcct tcactactg tgaagtgaag ttggcgcagc cctgaagaaa	1500
ctacctagga gaactaatag acacaggagt gacagggact ttgttatcag aaccagattc	1560
ctgccggctc ctttgaaaac aggtcatatt gtgctcttct gtttacaaga ggaaacaaga	1620
tggaataaaa gaaattggga tcttgggttg gagggacagt gaagcttaga gcacatgaac	1680
tcaaggttag tgactctgca ggacttcaca gagagagctg tgcccatcat tcagtccaag	1740
tgctttctct gccagacag cacagaactc cagccccgtt acttacatgg atcatcgagt	1800
ttccacctaa aatatgattc tatttatttt gagtcactgt taccaaatta gaactaaaac	1860
aaagttacat aaaaagttat tgtgactcca cttaatttta gtgacgtatt tttgtatata	1920
taggccaacc tataccacat caaaattat gtatctatta cagcccctag aagctttata	1980

aatacagtgt gtcttctttt attcacaaaa tttttgaaat cgtggttaata tggtttgaaa 2040  
cctgtatctt aattattttt tttttaaaatt gagacagggt ctactctgt cactcaatct 2100  
ggaatgcagt ggcacaatct tgctcactg caacgcctgc ctctcaggct caagcaaacc 2160  
tctcacctca gcctgctgag tagctgggac tacaggcaca tgccaccaa cttggccatt 2220  
ttttgtctta cgtagagaca agatttcacc gttttgcca ggctgggtctc aaactcctgg 2280  
gctcaagcaa tgtattgaat ttt 2303

<210> 11  
<211> 90  
<212> DNA  
<213> Homo Sapiens

<400> 11  
gggcctgaca gcaacttttc ttctactagt tcattctaac ttatcctgg taactggcga 60  
gacaacctgt cttaagtaac tgaagggaaa 90

<210> 12  
<211> 90  
<212> DNA  
<213> Homo Sapiens

<400> 12  
gggcctgaca gcaacttttc ttctactagt tcattctaac aactgctct gtacggggca 60  
cgtgggcaca ggtgcacact cacactcaca 90

<210> 13  
<211> 90  
<212> DNA  
<213> Homo Sapiens

<400> 13  
tccactgac gcatgcagga aggggcacct ccccttaacc aactgctct gtacggggca 60  
cgtgggcaca ggtgcacact cacactcaca 90

<210> 14  
<211> 2499  
<212> DNA  
<213> HOMO SAPIENS

<400> 14  
ctcaatcagc tttatgcaga gaagaagctt actgagctca ctgctgggtgc tgggtgtaggc 60  
aagtgtgct ttggcaatct gggctgacct ggcttgcttc ctcaagaactc cttctccaac 120  
cctggagcag gcttccatgc tgctgtgggc gtccttgctg gcctttgctc cagtctgtgg 180  
acaatctgca gctgcacaca aacctgtgat ttccgtccat cctccatgga ccacattctt 240

caaaggagag agagtgactc tgacttgcaa tggatttcag ttctatgcaa cagagaaaac	300
aacatgggat catcggcact actggggaga aaagttgacc ctgaccccag gaaacaccct	360
cgaggttcgg gaatctggac tgtacagatg ccaggcccgg ggctccccac gaagtaaccc	420
tgtgcgcttg ctcttttctt cagactcctt aatcctgcag gcaccatatt ctgtgtttga	480
aggtgacaca ttggttctga gatgccacag aagaaggaaa gagaaattga ctgctgtgaa	540
atatacttgg aatggaaaca ttctttccat ttctaataaa agctgggatc ttcttatccc	600
acaagcaagt tcaaataaca atggcaatta tcatgacatt ggatatggag atgagaatga	660
tgtattttaga tcaaatttca aaataattaa aattcaagaa ctatttccac atccagagct	720
gaaagctaca gactctcagc ctacagaggg gaattctgta aacctgagct gtgaaacaca	780
gcttcctcca gagcggtcag acacccact tcacttcaac ttcttcagag atggcgaggt	840
catcctgtca gactggagca cgtaccggga actccagctc ccaaccgtct ggagagaaaa	900
ctcaggatcc tattggtgtg gtgctgaaac agtgaggggt aacatccaca agcacagtcc	960
ctcgctacag atccatgtgc agcggatccc tgtgtctggg gtgctcctgg agaccagcc	1020
ctcagggggc caggctgttg aaggggagat gctggtcctt gtctgctccg tggctgaagg	1080
cacaggggat accacattct cctggcaccc agaggacatg caggagagtc tggggaggaa	1140
aactcagcgt tccctgagag cagagctgga gctccctgcc atcagacaga gccatgcagg	1200
gggatactac tgtacagcag acaacagcta cggccctgtc cagagcatgg tgctgaatgt	1260
cactgtgaga gagaccccag gcaacagaga tggccttgtc gccgcgggag ccactggagg	1320
gtgctcagtg gctcttctcc tggctgtggc cctgctgttt cactgctggc gtcggaggaa	1380
gtcaggagtt ggtttcttgg gagacgaaac caggctccct cccgctccag gccaggaga	1440
gtcctcccat tccatctgcc ctgcccagggt ggagcttcag tcgttgtatg ttgatgtaca	1500
ccccaaaaag ggagatttgg tatactctga gatccagact actcagctgg gagaagaaga	1560
ggaagctaata acctccagga cacttctaga ggataaggat gtctcagttg tctactctga	1620
ggtaaagaca caacaccag ataactcagc tggaaagatc agctctaagg atgaagaaag	1680
ttaagagaat gaaaagttac gggaaagctc tactcatgtg atttctccct tgtccaaagt	1740
cccaggccca gtgcagtcct tgcggcacct ggaatgatca actcattcca gctttctaata	1800
tcttctcatg catatgcatt cactcccagg aatactcatt cgtctactct gatgttggga	1860
tggaatggcc tctgaaagac ttactaaaa tgaccaggat ccacagttaa gagaagaccc	1920
tgtagtattt gctgtggggc tgacctaatg cattccctag ggtctgcttt agagaagggg	1980



gataaagaga gagaaggact gttatgaaaa acagaagcac aaattttggt gaattgggat 2040  
 ttgcagagat gaaaaagact gggtagacctg gatctctgct taatacatct acaaccattg 2100  
 tctcactgga gactcacttg catcagtttg tttaactgtg agtggctgca caggcactgt 2160  
 gcaaacaatg aaaagcccct tcacttctgc ctgcacagct tacactgtca ggattcagtt 2220  
 gcagattaaa gaacccatct ggaatgggtt acagagagag gaatttaaaa gaggacatca 2280  
 gaagagctgg agatgcaagc tctaggctgc gcttccaaaa gcaaatgata attatgttaa 2340  
 tgtcattagt gacaaagatt tgcaacatta gagaaaagag acacaaatat aaaattaaaa 2400  
 acttaagtac caactctcca aaactaaatt tgaacttaaa atattagtat aaactcataa 2460  
 taaactctgc ctttaaataa aaaaaaaaaa aaaaaaaaaa 2499

<210> 15  
 <211> 515  
 <212> PRT  
 <213> Homo Sapiens

<400> 15

Met Leu Leu Trp Ala Ser Leu Leu Ala Phe Ala Pro Val Cys Gly Gln  
 1 5 10 15

Ser Ala Ala Ala His Lys Pro Val Ile Ser Val His Pro Pro Trp Thr  
 20 25 30

Thr Phe Phe Lys Gly Glu Arg Val Thr Leu Thr Cys Asn Gly Phe Gln  
 35 40 45

Phe Tyr Ala Thr Glu Lys Thr Thr Trp Tyr His Arg His Tyr Trp Gly  
 50 55 60

Glu Lys Leu Thr Leu Thr Pro Gly Asn Thr Leu Glu Val Arg Glu Ser  
 65 70 75 80

Gly Leu Tyr Arg Cys Gln Ala Arg Gly Ser Pro Arg Ser Asn Pro Val  
 85 90 95

Arg Leu Leu Phe Ser Ser Asp Ser Leu Ile Leu Gln Ala Pro Tyr Ser  
 100 105 110

Val Phe Glu Gly Asp Thr Leu Val Leu Arg Cys His Arg Arg Arg Lys  
 115 120 125

Glu Lys Leu Thr Ala Val Lys Tyr Thr Trp Asn Gly Asn Ile Leu Ser  
 25

130	135	140
Ile Ser Asn Lys Ser Trp Asp Leu Leu Ile Pro Gln Ala Ser Ser Asn		
145	150	155 160
Asn Asn Gly Asn Tyr Arg Cys Ile Gly Tyr Gly Asp Glu Asn Asp Val		
	165	170 175
Phe Arg Ser Asn Phe Lys Ile Ile Lys Ile Gln Glu Leu Phe Pro His		
	180	185 190
Pro Glu Leu Lys Ala Thr Asp Ser Gln Pro Thr Glu Gly Asn Ser Val		
	195	200 205
Asn Leu Ser Cys Glu Thr Gln Leu Pro Pro Glu Arg Ser Asp Thr Pro		
	210	215 220
Leu His Phe Asn Phe Phe Arg Asp Gly Glu Val Ile Leu Ser Asp Trp		
	225	230 235 240
Ser Thr Tyr Pro Glu Leu Gln Leu Pro Thr Val Trp Arg Glu Asn Ser		
	245	250 255
Gly Ser Tyr Trp Cys Gly Ala Glu Thr Val Arg Gly Asn Ile His Lys		
	260	265 270
His Ser Pro Ser Leu Gln Ile His Val Gln Arg Ile Pro Val Ser Gly		
	275	280 285
Val Leu Leu Glu Thr Gln Pro Ser Gly Gly Gln Ala Val Glu Gly Glu		
	290	295 300
Met Leu Val Leu Val Cys Ser Val Ala Glu Gly Thr Gly Asp Thr Thr		
	305	310 315 320
Phe Ser Trp His Arg Glu Asp Met Gln Glu Ser Leu Gly Arg Lys Thr		
	325	330 335
Gln Arg Ser Leu Arg Ala Glu Leu Glu Leu Pro Ala Ile Arg Gln Ser		
	340	345 350
His Ala Gly Gly Tyr Tyr Cys Thr Ala Asp Asn Ser Tyr Gly Pro Val		
	355	360 365

Gln Ser Met Val Leu Asn Val Thr Val Arg Glu Thr Pro Gly Asn Arg  
 370 375 380

Asp Gly Leu Val Ala Ala Gly Ala Thr Gly Gly Leu Leu Ser Ala Leu  
 385 390 395 400

Ile Leu Ala Val Ala Leu Leu Phe His Cys Trp Arg Arg Arg Lys Ser  
 405 410 415

Gly Val Gly Phe Leu Gly Asp Glu Thr Arg Leu Pro Pro Ala Pro Gly  
 420 425 430

Pro Gly Glu Ser Ser His Ser Ile Cys Pro Ala Gln Val Glu Leu Gln  
 435 440 445

Ser Leu Tyr Val Asp Val His Pro Lys Lys Gly Asp Leu Val Tyr Ser  
 450 455 460

Glu Ile Gln Thr Thr Gln Leu Gly Glu Glu Glu Glu Ala Asn Thr Ser  
 465 470 475 480

Arg Thr Leu Leu Glu Asp Lys Asp Val Ser Val Val Tyr Ser Glu Val  
 485 490 495

Lys Thr Gln His Pro Asp Asn Ser Ala Gly Lys Ile Ser Ser Lys Asp  
 500 505 510

Glu Glu Ser  
 515

<210> 16  
 <211> 2805  
 <212> DNA  
 <213> Homo Sapiens

<400> 16  
 cggtgcagtg tcctgactgt aagatcaagt ccaaacctgt ttggaattg aggaaacttc 60  
 tcttttgatc tcagcccttg gtggtccagg tcttcatget gctgtgggtg atattactgg 120  
 tcttggtccc tgtcagtgga cagtttgcaa ggacaccag gccattatt ttcctccagc 180  
 ctccatggac cacagtcttc caaggagaga gagtgacct cacttgcaag ggatttcgct 240  
 tctactcacc acagaaaaca aaatgggtacc atcggtacct tgggaaagaa atactaagag 300  
 aaaccccaga caatatacct gaggttcagg aatctggaga gtacagatgc caggcccagg 360  
 gctccctct cagtagccct gtgcacttgg atttttcttc agcttcgctg atcctgcaag 420

ctccactttc tgtgtttgaa ggagactctg tggttctgag gtgccgggca aaggcggaag	480
taacactgaa taatactatt tacaagaatg ataatgtcct ggcatcctt aataaaagaa	540
ctgacttcca tattcctcat gcatgtctca aggacaatgg tgcataatgc tgtactggat	600
ataaggaaag ttgttgccct gtttcttcca atacagtcaa aatccaagtc caagagccat	660
ttacacgtcc agtgctgaga gccagctcct tccagcccat cagcgggaac ccagtgaccc	720
tgacctgtga gaccagctc tctctagaga ggtcagatgt cccgctccgg ttccgcttct	780
tcagagatga ccagaccctg ggattaggct ggagtctctc cccgaatttc cagattactg	840
ccatgtggag taaagattca gggttctact ggtgtaaggc agcaacaatg cctcacagcg	900
tcatatctga cagcccgaga tcctggatac aggtgcagat ccctgcatct catcctgtcc	960
tcactctcag ccctgaaaag gctctgaatt ttgagggaac caaggtgaca cttcactgtg	1020
aaaccagga agattctctg cgcactttgt acaggtttta tcatgagggg gtccccctga	1080
ggcacaagtc agtccgctgt gaaaggggag catccatcag cttctcactg actacagaga	1140
attcaggga ctactactgc acagctgaca atggccttgg cgccaagccc agtaaggctg	1200
tgagcctctc agtcaactgt cccgtgtctc atcctgtcct caacctcagc tctcctgagg	1260
acctgatttt tgagggagcc aagggtgacac ttcactgtga agcccagaga ggttactcc	1320
ccatcctgta ccagtttcat catgaggatg ctgccctgga gcgtaggctg gccaaactctg	1380
caggaggagt ggccatcagc ttctctctga ctgcagagca ttcagggaac tactactgca	1440
cagctgacaa tggctttggc cccagcgca gtaaggcggg gagcctctcc atcactgtcc	1500
ctgtgtctca tcctgtctc accctcagct ctgctgaggg cctgactttt gaaggagcca	1560
ctgtgacact tcaactgtgaa gtccagagag gttccccaca aatcctatac cagttttatc	1620
atgaggacat gcccctgtgg agcagctcaa caccctctgt ggggaagagtg tccttcagct	1680
tctctctgac tgaaggacat tcagggaatt actactgcac agctgacaat ggctttggtc	1740
cccagcgag tgaagtgggt agcctttttg tcaactgttc agtgtctcgc cccatcctca	1800
ccctcagggt tcccagggcc caggctgtgg tgggggacct gctggagctt cactgtgagg	1860
ccccgagagg ctctcccca atcctgtact ggttttatca tgaggatgtc accctgggga	1920
gcagctcagc cccctctgga ggagaagctt ctttcaacct ctctctgact gcagaacatt	1980
ctggaaacta ctcatgtgag gccacaatg gcctagtggc ccagcacagt gacacaatat	2040
cactcagtgt tatagttcca gtatctcgtc ccatcctcac cttcagggtt cccagggccc	2100
aggctgtggg gggggacctg ctggagcttc actgtgaggg cctgagaggg tcctcccaaa	2160

tctgtactg gttttatcat gaagatgtca ccttgggtaa gatctcagcc cctctggag 2220  
 gaggggcctc cttcaacctc tctctgacta cagaacattc tggaatctac tctgtgagg 2280  
 cagacaatgg tctggaggcc cagcgcagtg agatgggtgac actgaaagtt gcaggtgagt 2340  
 gggccctgcc caccagcagc acatctgaga actgactgtg cctgttctcc ctgcagctga 2400  
 aaatggagcc acagagctcc tcagggtgtg ttgcttgtgt ggcattcccag cacacttcct 2460  
 gcctgcagaa cctccctgtg aaagtctcgg atcctttgtg gtatgggtcc aggaatctga 2520  
 tgtttcccag cagtcttctt gaagatgata aaagcacctc actaaaaatg caaataagac 2580  
 ttttttagaa cataaactat attctgaact gaaattatta catgaaaatg aaaccaaaga 2640  
 attctgagca tatgtttctc tgccgtagaa aggattaagc tgtttcttgt ccggattctt 2700  
 ctctcattga cttctaagaa gcctctactc ttgagtctct ttcattactg gggatgtaaa 2760  
 tgttccttac atttccacat taaaaatcct atgtaacga aaaaa 2805

<210> 17  
 <211> 759  
 <212> PRT  
 <213> Homo Sapiens

<400> 17

Met Leu Leu Trp Val Ile Leu Leu Val Leu Ala Pro Val Ser Gly Gln  
 1 5 10 15

Phe Ala Arg Thr Pro Arg Pro Ile Ile Phe Leu Gln Pro Pro Trp Thr  
 20 25 30

Thr Val Phe Gln Gly Glu Arg Val Thr Leu Thr Cys Lys Gly Phe Arg  
 35 40 45

Phe Tyr Ser Pro Gln Lys Thr Lys Trp Tyr His Arg Tyr Leu Gly Lys  
 50 55 60

Glu Ile Leu Arg Glu Thr Pro Asp Asn Ile Leu Glu Val Gln Glu Ser  
 65 70 75 80

Gly Glu Tyr Arg Cys Gln Ala Gln Gly Ser Pro Leu Ser Ser Pro Val  
 85 90 95

His Leu Asp Phe Ser Ser Ala Ser Leu Ile Leu Gln Ala Pro Leu Ser  
 100 105 110

Val Phe Glu Gly Asp Ser Val Val Leu Arg Cys Arg Ala Lys Ala Glu  
 29

115	120	125
Val Thr Leu Asn Asn Thr Ile Tyr Lys Asn Asp Asn Val Leu Ala Phe		
130	135	140
Leu Asn Lys Arg Thr Asp Phe His Ile Pro His Ala Cys Leu Lys Asp		
145	150	155
Asn Gly Ala Tyr Arg Cys Thr Gly Tyr Lys Glu Ser Cys Cys Pro Val		
	165	170
Ser Ser Asn Thr Val Lys Ile Gln Val Gln Glu Pro Phe Thr Arg Pro		
	180	185
Val Leu Arg Ala Ser Ser Phe Gln Pro Ile Ser Gly Asn Pro Val Thr		
	195	200
Leu Thr Cys Glu Thr Gln Leu Ser Leu Glu Arg Ser Asp Val Pro Leu		
	210	215
Arg Phe Arg Phe Phe Arg Asp Asp Gln Thr Leu Gly Leu Gly Trp Ser		
225	230	235
Leu Ser Pro Asn Phe Gln Ile Thr Ala Met Trp Ser Lys Asp Ser Gly		
	245	250
Phe Tyr Trp Cys Lys Ala Ala Thr Met Pro His Ser Val Ile Ser Asp		
	260	265
Ser Pro Arg Ser Trp Ile Gln Val Gln Ile Pro Ala Ser His Pro Val		
	275	280
Leu Thr Leu Ser Pro Glu Lys Ala Leu Asn Phe Glu Gly Thr Lys Val		
	290	295
Thr Leu His Cys Glu Thr Gln Glu Asp Ser Leu Arg Thr Leu Tyr Arg		
305	310	315
Phe Tyr His Glu Gly Val Pro Leu Arg His Lys Ser Val Arg Cys Glu		
	325	330
Arg Gly Ala Ser Ile Ser Phe Ser Leu Thr Thr Glu Asn Ser Gly Asn		
	340	345
		350

Tyr Tyr Cys Thr Ala Asp Asn Gly Leu Gly Ala Lys Pro Ser Lys Ala  
 355 360 365

Val Ser Leu Ser Val Thr Val Pro Val Ser His Pro Val Leu Asn Leu  
 370 375 380

Ser Ser Pro Glu Asp Leu Ile Phe Glu Gly Ala Lys Val Thr Leu His  
 385 390 395 400

Cys Glu Ala Gln Arg Gly Ser Leu Pro Ile Leu Tyr Gln Phe His His  
 405 410 415

Glu Asp Ala Ala Leu Glu Arg Arg Ser Ala Asn Ser Ala Gly Gly Val  
 420 425 430

Ala Ile Ser Phe Ser Leu Thr Ala Glu His Ser Gly Asn Tyr Tyr Cys  
 435 440 445

Ala Thr Asp Asn Gly Phe Gly Pro Gln Arg Ser Lys Ala Val Ser Leu  
 450 455 460

Ser Ile Thr Val Pro Val Ser His Pro Val Leu Thr Leu Ser Ser Ala  
 465 470 475 480

Glu Ala Leu Thr Phe Glu Gly Ala Thr Val Thr Leu His Cys Glu Val  
 485 490 495

Gln Arg Gly Ser Pro Gln Ile Leu Tyr Gln Phe Tyr His Glu Asp Met  
 500 505 510

Pro Leu Trp Ser Ser Ser Thr Pro Ser Val Gly Arg Val Ser Phe Ser  
 515 520 525

Phe Ser Leu Thr Glu Gly His Ser Gly Asn Tyr Tyr Cys Thr Ala Asp  
 530 535 540

Asn Gly Phe Gly Pro Gln Arg Ser Glu Val Val Ser Leu Phe Val Thr  
 545 550 555 560

Val Pro Val Ser Arg Pro Ile Leu Thr Leu Arg Val Pro Arg Ala Gln  
 565 570 575

Ala Val Val Gly Asp Leu Leu Glu Leu His Cys Glu Ala Pro Arg Gly  
 580 585 590

Ser Pro Pro Ile Leu Tyr Trp Phe Tyr His Glu Asp Val Thr Leu Gly  
595 600 605

Ser Ser Ser Ala Pro Ser Gly Gly Glu Ala Ser Phe Asn Leu Ser Leu  
610 615 620

Thr Ala Glu His Ser Gly Asn Tyr Ser Cys Glu Ala Asn Asn Gly Leu  
625 630 635 640

Val Ala Gln His Ser Asp Thr Ile Ser Leu Ser Val Ile Val Pro Val  
645 650 655

Ser Arg Pro Ile Leu Thr Phe Arg Ala Pro Arg Ala Gln Ala Val Val  
660 665 670

Gly Asp Leu Leu Glu Leu His Cys Glu Ala Leu Arg Gly Ser Ser Pro  
675 680 685

Ile Leu Tyr Trp Phe Tyr His Glu Asp Val Thr Leu Gly Lys Ile Ser  
690 695 700

Ala Pro Ser Gly Gly Gly Ala Ser Phe Asn Leu Ser Leu Thr Thr Glu  
705 710 715 720

His Ser Gly Ile Tyr Ser Cys Glu Ala Asp Asn Gly Leu Glu Ala Gln  
725 730 735

Arg Ser Glu Met Val Thr Leu Lys Val Ala Gly Glu Trp Ala Leu Pro  
740 745 750

Thr Ser Ser Thr Ser Glu Asn  
755

<210> 18  
<211> 4448  
<212> DNA  
<213> Homo Sapiens

<400> 18  
cggtgcagtg tcttgactgt aagatcaagt ccaaacctgt tttggaattg aggaaacttc 60  
tcttttgatc tcagcccttg gtggtccagg tcttcatgct gctgtgggtg atattactgg 120  
tcttggtccc tgtcagtga cagtttgcaa ggacaccag gccattatt ttctccagc 180  
ctccatggac cacagtcttc caaggagaga gaggaccct cacttgcaag ggatttcgct 240



tctactcacc acagaaaaca aaatggtacc atcggtacct tgggaaagaa atactaagag	300
aaaccccaga caatatcctt gaggttcagg aatctggaga gtacagatgc caggcccagg	360
gctccccctct cagtagccct gtgcacttgg atttttcttc agcttcgctg atcctgcaag	420
ctccactttc tgtgtttgaa ggagactctg tggttctgag gtgccgggca aaggcggaag	480
taacactgaa taatactatt tacaagaatg ataatgtcct ggcattcctt aataaaagaa	540
ctgacttcca tattcctcat gcatgtctca aggacaatgg tgcatatcgc tgtactggat	600
ataaggaaag ttgttgccct gtttcttcca atacagtcaa aatccaagtc caagagccat	660
ttacacgtcc agtgctgaga gccagctcct tccagcccat cagcgggaac ccagtgaccc	720
tgacctgtga gaccagctc tctctagaga ggtcagatgt cccgctccgg ttccgcttct	780
tcagagatga ccagaccctg ggattaggct ggagtctctc cccgaatttc cagattactg	840
ccatgtggag taaagattca gggttctact ggtgtaaggc agcaacaatg cctcacagcg	900
tcatatctga cagcccagaga tcctggatac aggtgcagat ccctgcatct catcctgtcc	960
tcactctcag ccctgaaaag gctctgaatt ttgagggaaac caaggtgaca cttcactgtg	1020
aaacccagga agattctctg cgcactttgt acaggtttta tcatgagggg gtccccctga	1080
ggcacaagtc agtccgctgt gaaaggggag catccatcag cttctcactg actacagaga	1140
attcagggaa ctactactgc acagctgaca atggccttgg cgccaagccc agtaaggctg	1200
tgagcctctc agtactgtt cccgtgtctc atcctgtcct caacctcagc tctcctgagg	1260
acctgatttt tgagggagcc aagggtgacac ttactgtga agcccagaga ggttcactcc	1320
ccatcctgta ccagtttcat catgaggatg ctgccctgga gcgtaggtcg gccaactctg	1380
caggaggagt ggccatcagc ttctctctga ctgcagagca ttcagggaac tactactgca	1440
cagctgacaa tggctttggc ccccagcgca gtaaggcggg gagcctctcc atcactgtcc	1500
ctgtgtctca tcctgtctc accctcagct ctgctgaggc cctgactttt gaaggagcca	1560
ctgtgacact tctactgtga gtccagagag gttccccaca aatcctatac cagttttatc	1620
atgaggacat gcccctgtgg agcagctcaa caccctctgt ggggaagagtg tccttcagct	1680
tctctctgac tgaaggacat tcaggggaatt actactgcac agctgacaat ggctttggtc	1740
cccagcgcag tgaagtgggtg agcctttttg tctactggtaa gtgctgggtt cttgccagtc	1800
acccacccct ggctgagttc tctctcacc attcctttta aaatctgttt gactgtcca	1860
gtttcctccc ctaatcaact taatcccctt cttggcttcc tcctcaacta actagctggg	1920
gttttccgta ctcataagtc ctggctcagc cagacccta aaacagctca gtagattccc	1980
cagcttttac caaatgaatt tatttattgt atttctcct cattccttgt atgttccaac	2040

agtacgccaa tttttcttga tgcacggagc gtgtcctact tctctactga catttacata	2100
ttaacttagc tacaagcaca gtcttataga taaatattgg tcaagacctt aaattctcca	2160
aaggatttcc aatcttatgg tagatttggg gaaagctgct ggtgaacaaa gggggaaatg	2220
gctccctagg aaccaactcc tcaaacttct ggagttttta tgatcccttg ttttctaacc	2280
tgctaaaatc agtatcattt tattgtatta ttttaaaaaa actattgttg aagtatgaca	2340
tacattcaag aaacgtgtgc aaattgtatg tgtacgattt ggtgtctttt taggagctaa	2400
gttgcttctg tttttacttg aatctttgtt tatagaaact gggggaaagt ttactttctt	2460
ttcagagaag ccaaatggta tgatagaaaa atcttgagcc tgatgtgtca gacatgcccc	2520
tagcataact tgttgagtaa agaggttatt tttaaaatgt gaatgttctg agactactcc	2580
aaagtccagag ccaaatctac taggaagctt ctagacttca ctcattctgc atcccattac	2640
tatcttttta tccatgtttt actttcttct catattcagc agcatcttaa gcctctttat	2700
tttctgtttc ttgactgtca cccttaatgc cagtagaatg taagcttcat gagaacagaa	2760
ctgcatccat cttggtcttc acaacatccc tgtgcctact cagtgtttgg cacacagtag	2820
gtcctcagtc aacatttgta atttagtgga cagatgatat gacaagatga taagagggga	2880
tttaaaaaaa tcacttagca aagcccaaga ggaaaaaaa caaagctatt ttagaaatga	2940
aataccaatt tgaagcagta agaatagatt ggatatcttt gaaaaccatt aattgaatga	3000
agaaccaatt tgagaaaaca atacagaatg caaagtagaa agatacagaa ataaaggcaa	3060
aagttataat atggaaatca gacaatggat ttgtctgtat ccagttatgt ggataattaa	3120
aatggagacc ctcagaaaaa tgaaccgaag agtaaaatga aactcaaaaa tgtagtagaa	3180
attgttggga agtaaagaaa acttgaatat gtagatcaga acatatatgt tgatgacgtt	3240
attgactttg aggttaaaaa tatatatatg tgctatgat tatggggaaa aaagcagtcg	3300
tctcagaaag aaaaacatca agttagtctt agactttgca gtgcactcag taccaaagag	3360
agaggaggcc agacttggac ctgagggga agaataataa ccgaaaattt tatatcaatt	3420
caaaaagaca ttgtcaaaaa tacagggatt caggaaactg agaatgcact aagccttctg	3480
gaaaaaacac ctaatgacaa aatctagccc aacaagatgt aatgaatat aaaggactca	3540
taatgaggaa accgcattat gactggctct caaccctggc cgcatattag actcgtcaaa	3600
gacctttgta aaaggtcaca cattgactcg tcaaagcccc tctccagact aattcaattc	3660
agaatctcac agatggggcc acagaatcag tattttttga cacaacctca agtgagaata	3720
ttgtgtagac aagattggaa accactgatt tagatataga aacaaaggct aatcaactgt	3780

gagaattatg gtcacagaat agaaagtaac tattatgaac actgaaaatg taaaaaaaaat 3840  
 gtaacaaaga aaaatagtta gaggaaggag aggaagtaaa ggaacaatca ttttctcatg 3900  
 attattatta tttcagagta aattgtgagt tatttcacaa ttcaaaaaga atggactgtt 3960  
 ttaaaaaatt agtaatagat ttcaaatgt ccattttgta aatcgtttct gaatactttg 4020  
 tcaacagtta ctcattcatta atggcttata cttcactaaa attccatgga aaaccaacta 4080  
 gtagcctgta gagtcacata ggagagaaca agtgaattct ttgggtggcg caagcataga 4140  
 tgtaggact gacaaaaaaaa aataataaaa ataaacctgt gcattgatat gatcacaat 4200  
 gatcaggga agaggaaaca gaaactctca tacgccatta ttacaagtgt aaattgggtc 4260  
 aaccttttcg tcttaattga cacattgtaa ttgtatatat ttatggaagc acagtttgat 4320  
 attttgatat acatacatgg tatataacga tcaaattagg atatttaatg tacccatcat 4380  
 ctcatgcatt tatcatttct ttggaataaa aacattcaaa agccaaaaaa aaaaaaaaaa 4440  
 aaaaaaaaaa 4448

<210> 19  
 <211> 592  
 <212> PRT  
 <213> Homo Sapiens

<400> 19

Met Leu Leu Trp Val Ile Leu Leu Val Leu Ala Pro Val Ser Gly Gln  
 1 5 10 15

Phe Ala Arg Thr Pro Arg Pro Ile Ile Phe Leu Gln Pro Pro Trp Thr  
 20 25 30

Thr Val Phe Gln Gly Glu Arg Val Thr Leu Thr Cys Lys Gly Phe Arg  
 35 40 45

Phe Tyr Ser Pro Gln Lys Thr Lys Trp Tyr His Arg Tyr Leu Gly Lys  
 50 55 60

Glu Ile Leu Arg Glu Thr Pro Asp Asn Ile Leu Glu Val Gln Glu Ser  
 65 70 75 80

Gly Glu Tyr Arg Cys Gln Ala Gln Gly Ser Pro Leu Ser Ser Pro Val  
 85 90 95

His Leu Asp Phe Ser Ser Ala Ser Leu Ile Leu Gln Ala Pro Leu Ser  
 100 105 110

Val Phe Glu Gly Asp Ser Val Val Leu Arg Cys Arg Ala Lys Ala Glu  
 115 120 125

Val Thr Leu Asn Asn Thr Ile Tyr Lys Asn Asp Asn Val Leu Ala Phe  
 130 135 140

Leu Asn Lys Arg Thr Asp Phe His Ile Pro His Ala Cys Leu Lys Asp  
 145 150 155 160

Asn Gly Ala Tyr Arg Cys Thr Gly Tyr Lys Glu Ser Cys Cys Pro Val  
 165 170 175

Ser Ser Asn Thr Val Lys Ile Gln Val Gln Glu Pro Phe Thr Arg Pro  
 180 185 190

Val Leu Arg Ala Ser Ser Phe Gln Pro Ile Ser Gly Asn Pro Val Thr  
 195 200 205

Leu Thr Cys Glu Thr Gln Leu Ser Leu Glu Arg Ser Asp Val Pro Leu  
 210 215 220

Arg Phe Arg Phe Phe Arg Asp Asp Gln Thr Leu Gly Leu Gly Trp Ser  
 225 230 235 240

Leu Ser Pro Asn Phe Gln Ile Thr Ala Met Trp Ser Lys Asp Ser Gly  
 245 250 255

Phe Tyr Trp Cys Lys Ala Ala Thr Met Pro His Ser Val Ile Ser Asp  
 260 265 270

Ser Pro Arg Ser Trp Ile Gln Val Gln Ile Pro Ala Ser His Pro Val  
 275 280 285

Leu Thr Leu Ser Pro Glu Lys Ala Leu Asn Phe Glu Gly Thr Lys Val  
 290 295 300

Thr Leu His Cys Glu Thr Gln Glu Asp Ser Leu Arg Thr Leu Tyr Arg  
 305 310 315 320

Phe Tyr His Glu Gly Val Pro Leu Arg His Lys Ser Val Arg Cys Glu  
 325 330 335

Arg Gly Ala Ser Ile Ser Phe Ser Leu Thr Thr Glu Asn Ser Gly Asn  
 340 345 350

Tyr Tyr Cys Thr Ala Asp Asn Gly Leu Gly Ala Lys Pro Ser Lys Ala  
355 360 365

Val Ser Leu Ser Val Thr Val Pro Val Ser His Pro Val Leu Asn Leu  
370 375 380

Ser Ser Pro Glu Asp Leu Ile Phe Glu Gly Ala Lys Val Thr Leu His  
385 390 395 400

Cys Glu Ala Gln Arg Gly Ser Leu Pro Ile Leu Tyr Gln Phe His His  
405 410 415

Glu Asp Ala Ala Leu Glu Arg Arg Ser Ala Asn Ser Ala Gly Gly Val  
420 425 430

Ala Ile Ser Phe Ser Leu Thr Ala Glu His Ser Gly Asn Tyr Tyr Cys  
435 440 445

Thr Ala Asp Asn Gly Phe Gly Pro Gln Arg Ser Lys Ala Val Ser Leu  
450 455 460

Ser Ile Thr Val Pro Val Ser His Pro Val Leu Thr Leu Ser Ser Ala  
465 470 475 480

Glu Ala Leu Thr Phe Glu Gly Ala Thr Val Thr Leu His Cys Glu Val  
485 490 495

Gln Arg Gly Ser Pro Gln Ile Leu Tyr Gln Phe Tyr His Glu Asp Met  
500 505 510

Pro Leu Val Ser Ser Ser Thr Pro Ser Val Gly Arg Val Ser Phe Ser  
515 520 525

Phe Ser Leu Thr Glu Gly His Ser Gly Asn Tyr Tyr Cys Thr Ala Asp  
530 535 540

Asn Gly Phe Gly Pro Gln Arg Ser Glu Val Val Ser Leu Phe Val Thr  
545 550 555 560

Gly Lys Cys Trp Val Leu Ala Ser Lys Pro Pro Leu Ala Glu Phe Ser  
565 570 575

Leu Thr His Ser Phe Lys Asn Leu Phe Ala Leu Ser Ser Phe Leu Pro  
37

580

585

590

<210> 20  
 <211> 5323  
 <212> DNA  
 <213> Homo Sapiens

<400> 20  
 cgggtgcagtg tcctgactgt aagatcaagt ccaaacctgt tttggaattg aggaaacttc 60  
 tcttttgatc tcagcccttg gtggtccagg tcttcatgct gctgtgggtg atattactgg 120  
 tcctggctcc tgtcagtga cagtttgaa ggacaccag gccattatt ttcctccagc 180  
 ctccatggac cacagtcttc caaggagaga gagtgaccct cacttgcaag ggatttcgct 240  
 tctactcacc acagaaaaca aaatggtacc atcgggtacc tgggaaagaa atactaagag 300  
 aaacccagaga caatattcctt gaggttcagg aatctggaga gtacagatgc caggcccagg 360  
 gctcccctct cagtagccct gtgcacttg atttttcttc agcttcgctg atcctgcaag 420  
 ctccactttc tgtgtttgaa ggagactctg tggttctgag gtgccgggca aaggcggaag 480  
 taacactgaa taatactatt tacaagaatg ataatgtcct ggcatcctt aataaaagaa 540  
 ctgacttcca tattcctcat gcatgtctca aggacaatgg tgcataatgc tgtactggat 600  
 ataaggaaag ttgttgccct gtttcttcca atacagtcaa aatccaagtc caagagccat 660  
 ttacacgtcc agtgctgaga gccagctcct tccagcccat cagcggaac ccagtgacct 720  
 tgacctgtga gaccagctc tctctagaga ggtcagatgt cccgctccgg ttccgcttct 780  
 tcagagatga ccagaccctg ggattaggct ggagtctctc cccgaatttc cagattactg 840  
 ccatgtggag taaagattca gggttctact ggtgtaaggc agcaacaatg cctcacagcg 900  
 tcatatctga cagcccagaga tcctggatac aggtgcagat ccctgcatct catcctgtcc 960  
 tcactctcag ccctgaaaag gctctgaatt ttgaggaac caaggtgaca cttactgtg 1020  
 aaacccagga agattctctg cgcactttgt acaggtttta tcatgagggt gtccccctga 1080  
 ggacacaagtc agtccgctgt gaaaggggag catccatcag cttctcactg actacagaga 1140  
 attcagggaa ctactactgc acagctgaca atggccttg cgccaagccc agtaaggctg 1200  
 tgagcctctc agtactgtt cccgtgtctc atcctgtcct caacctcagc tctctgagg 1260  
 acctgatttt tgaggagacc aaggtagcac ttactgtga agcccagaga ggttactcc 1320  
 ccactctgta ccagtttcat catgaggatg ctgccctgga gcgtaggctg gccaaactctg 1380  
 caggaggagt ggccatcagc ttctctctga ctgcagagca ttcaggaac tactactgca 1440  
 cagctgacaa tggctttggc cccagcgca gtaaggcggg gagcctctcc atcactgtcc 1500

ctgtgtctca tctgtctctc accctcagct ctgtgaggc cctgactttt gaaggagcca	1560
ctgtgacact tcaactgtgaa gtccagagag gttccccaca aatcctatac cagttttatc	1620
atgaggacat gcccctgtgg agcagctcaa caccctctgt gggaagagtg tccttcagct	1680
tctctctgac tgaaggacat tcaggaatt actactgcac agctgacaat ggctttggtc	1740
cccagcgag tgaagtgggtg agcctttttg tcaactgttcc agtgtctcgc cccatcctca	1800
ccctcagggg tcccagggcc caggctgtgg tgggggacct gctggagctt cactgtgagg	1860
ccccgagagg ctctccccc atcctgtact ggttttatca tgaggatgtc accctgggga	1920
gcagctcagc cccctctgga ggagaagctt ctttcaacct ctctctgact gcagaacatt	1980
ctggaaacta ctcatgtgag gccaacaatg gcctagtggc ccagcacagt gacacaatat	2040
cactcagtgt tatagttcca gtatctctgc ccctcctcac cttcagggct cccagggccc	2100
aggctgtggg gggggacctg ctggagcttc actgtgaggc cctgagaggc tcctcccca	2160
tcctgtactg gttttatcat gaagatgtca ccctgggtaa gatctcagcc ccctctggag	2220
gaggggcctc cttcaacctc tctctgacta cagaacattc tggaatctac tcctgtgagg	2280
cagacaatgg tctggaggcc cagcgagctg agatgggtgac actgaaagt gcagttccgg	2340
tgtctcgcgc ggtcctcacc ctgagggctc cggggacca tgctgcggtg ggggacctgc	2400
tggagcttca ctgtgaggcc ctgagaggct ctccctgat cctgtaccgg ttttttcatg	2460
aggatgtcac cctaggaaat aggtcgtccc cctctggagg agcgtcctta aacctctctc	2520
tgactgcaga gcactctgga aactactcct gtgaggccga caatggcctc ggggcccagc	2580
gcagtgagac agtgacactt tatatcacag ggctgaccgc gaacagaagt ggcccttttg	2640
ccacaggagt cgccgggggc ctgctcagca tagcaggcct tgctgcgggg gcactgctgc	2700
tctactgctg gctctcgaga aaagcaggga gaaagcctgc ctctgacccc gccaggagcc	2760
cttcagactc ggactcccaa gagcccacct atcacaatgt accagcctgg gaagagctgc	2820
aaccagtgtg cactaatgca aatcctagag gagaaaatgt ggtttactca gaagtacgga	2880
tcaccaaga gaaaaagaaa catgcagtgg cctctgacct caggcatctc aggaacaagg	2940
gttcccctat catctactct gaagttaagg tggcgtaac ccgggtttcc ggatccctgt	3000
tcttggttc ctcagctcct cacagatgag tccacacgtc tctccaactg ctgtttcagc	3060
ctctgcaccc caaagtctcc cttgggggag aagcagcatt gaagtgggaa gatttaggct	3120
gccccagacc atatctactg gcctttgttt cacatgtcct cattctcagt ctgaccagaa	3180
tgcagggccc tgctggactg tcacctgttt ccagttaaa gccctgactg gcaggttttt	3240
taatccagtg gcaagggtgt cccactccag ggcccagcac atctcctgga ttccttagtg	3300

ggcttcagct gtggttgctg ttctgagtac tgctctcatc acacccccac agaggggggc	3360
ttaccacaca aaggagaggt gggccttcag gagatgccgg gctggcctaa cagctcaggt	3420
gctcctaaac tccgacacag agttcctgct ttgggtggat gcatttctca attgtcatca	3480
gcctgggtggg gctactgcag tgtgctgccaa aatgggacag cacacagcct gtgcacatgg	3540
gacatgtgat gggctctccc acgggggctg catttcacac tcctccacct gtctcaaact	3600
ctaaggctgg cacttgacac caaggtaact tctctcctgc tcatgtgtca gtgtctacct	3660
gccaagtaa gtggctttca tacaccaagt ccgaagttc ttcccatcct aacagaagta	3720
accagcaag tcaaggccag gaggaccagg ggtgcagaca gaacacatac tggaacacag	3780
gaggtgctca attactatct gactgactga ctgaatgaat gaatgaatga ggaagaaaac	3840
tgtgggtaat caaactggca taaaatccag tgcactccct aggaaatccg ggaggtattc	3900
tggtctccta agaaacaacg gaagagaagg agcttgatg aagaaactgt tcagcaagaa	3960
gaagggtctc ttcacacttt tatgtgcttg tggatcacct gaggatctgt gaaaatacag	4020
atactgattc agtgggtctg tgtagagcct gagactgcca ttctaactg ttcccagggg	4080
atgctgatgc tgctggccct gggactgcac tgcattgatg tgaagcccta taggtctcag	4140
cagaggccca tggagagggg atgtgtgggt ctggctgcc accggcccaac tcggttcaca	4200
cggatcgtgc tgctccctgg ccagccttg gccacagcac caccagctgc tgttgctgag	4260
agagggtctt ctctgtgaca tgttggttt catcagccac cctgggaagc ggaaagtagc	4320
tgccactatc tttgtttccc cacctcaggc ctcacacttt cccatgaaaa ggggtgaatgt	4380
atataacctg agccctctcc attcagagtt gttctcccat ctctgagcaa tgggatgttc	4440
tgttccgctt ttatgatata catcacatct tatcttgatc tttgtccca gtggattgta	4500
cagtgatgac ttttaagccc cacggccctg aaataaaatc cttccaaggc cattggaagc	4560
tcactccacc tgaacctagg cttttcatgc ttccaagtgt cagggccttg ccagataga	4620
cagggtgac tctgctgcc caacctttca aggaggaaac cagacacctg agacaggagc	4680
ctgtatgcag ccagtgagc ccttgagag gacaaggctg gaggcatttg tcatcactac	4740
agatatgcaa ctaaaataga cgtggagcaa gagaaatgca ttcccaccga ggccgctttt	4800
ttaggcctag ttgaaagtca agaaggacag cagcaagcat aggctcagga tttaaagaaa	4860
aaatctgctc acagtctgtt ctggaggta catcaccaac aaagctcacg ccctatgcag	4920
ttctgagaag gtggaggcac caggctcaaa agaggaaatt tagaatttct cattgggaga	4980
gtaagggtacc cccatcccag aatgataact gcacagtggc agaacaaact ccaccctaat	5040



gtgggtggac cccatccagt ctgttgaagg cctgaatgta acaaaagggc ttattcttcc 5100  
tcaagtaagg gggaaactcct gctttgggct gggacataag tttttctgct ttcagacgca 5160  
aactgaaaaa tggctcttct tgggtcttga gcttgctggc atatggactg aaagaaacta 5220  
tgctattgga tctcctggat ctccagcttg ctgactgcag atcttgagat atgtcagcct 5280  
ctacagtcac aagagctaata tcattctaata aaaccaatct ttc 5323

<210> 21  
<211> 977  
<212> PRT  
<213> Homo sapiens

<400> 21

Met Leu Leu Trp Val Ile Leu Leu Val Leu Ala Pro Tyr Ser Gly Gln  
1 5 10 15

Phe Ala Arg Thr Pro Arg Pro Ile Ile Phe Leu Gln Pro Pro Trp Thr  
20 25 30

Thr Val Phe Gln Gly Glu Arg Val Thr Leu Thr Cys Lys Gly Phe Arg  
35 40 45

Phe Tyr Ser Pro Gln Lys Thr Lys Trp Tyr His Arg Tyr Leu Gly Lys  
50 55 60

Glu Ile Leu Arg Glu Thr Pro Asp Asn Ile Leu Glu Val Gln Glu Ser  
65 70 75 80

Gly Ser Tyr Arg Cys Gln Ala Gln Gly Ser Pro Leu Ser Ser Pro Val  
85 90 95

His Leu Asp Phe Ser Ser Ala Ser Leu Ile Leu Gln Ala Pro Leu Ser  
100 105 110

Val Phe Glu Gly Asp Ser Val Val Leu Arg Cys Arg Ala Lys Ala Glu  
115 120 125

Val Thr Leu Asn Asn Thr Ile Tyr Lys Asn Asp Asn Val Leu Ala Phe  
130 135 140

Leu Asn Lys Arg Thr Asp Phe His Ile Pro His Ala Cys Leu Lys Asp  
145 150 155 160

Asn Gly Ala Tyr Arg Cys Thr Gly Tyr Lys Glu Ser Cys Cys Pro Val  
41

165	170	175
Ser Ser Asn Thr Val Lys Ile Gln Val Gln Glu Pro Phe Thr Arg Pro		
180	185	190
Val Leu Arg Ala Ser Ser Phe Gln Pro Ile Ser Gly Asn Pro Val Thr		
195	200	205
Leu Thr Cys Glu Thr Gln Leu Ser Leu Glu Arg Ser Asp Val Pro Leu		
210	215	220
Arg Phe Arg Phe Phe Arg Asp Asp Gln Thr Leu Gly Leu Gly Trp Ser		
225	230	235
Leu Ser Pro Asn Phe Gln Ile Thr Ala Met Trp Ser Lys Asp Ser Gly		
245	250	255
Phe Tyr Trp Cys Lys Ala Ala Thr Met Pro His Ser Val Ile Ser Asp		
260	265	270
Ser Pro Arg Ser Trp Ile Gln Val Gln Ile Pro Ala Ser His Pro Val		
275	280	285
Leu Thr Leu Ser Pro Glu Lys Ala Leu Asn Phe Glu Gly Thr Lys Val		
290	295	300
Thr Leu His Cys Glu Thr Gln Glu Asp Ser Leu Arg Thr Leu Tyr Arg		
305	310	315
Phe Tyr His Glu Gly Val Pro Leu Arg His Lys Ser Val Arg Cys Glu		
325	330	335
Arg Gly Ala Ser Ile Ser Phe Ser Leu Thr Thr Glu Asn Ser Gly Asn		
340	345	350
Tyr Tyr Cys Thr Ala Asp Asn Gly Leu Gly Ala Lys Pro Ser Lys Ala		
355	360	365
Val Ser Leu Ser Val Thr Val Pro Val Ser His Pro Val Leu Asn Leu		
370	375	380
Ser Ser Pro Glu Asp Leu Ile Phe Glu Gly Ala Lys Val Thr Leu His		
385	390	395
		400

Cys Glu Ala Gln Arg Gly Ser Leu Pro Ile Leu Tyr Gln Phe His His  
 405 410 415  
 Glu Asp Ala Ala Leu Glu Arg Arg Ser Ala Asn Ser Ala Gly Gly Val  
 420 425 430  
 Ala Ile Ser Phe Ser Leu Thr Ala Glu His Ser Gly Asn Tyr Tyr Cys  
 435 440 445  
 Thr Ala Asp Asn Gly Phe Gly Pro Gln Arg Ser Lys Ala Val Ser Leu  
 450 455 460  
 Ser Ile Thr Val Pro Val Ser His Pro Val Leu Thr Leu Ser Ser Ala  
 465 470 475 480  
 Glu Ala Leu Thr Phe Glu Gly Ala Thr Val Thr Leu His Cys Glu Val  
 485 490 495  
 Gln Arg Gly Ser Pro Gln Ile Leu Tyr Gln Phe Tyr His Glu Asp Met  
 500 505 510  
 Pro Leu Trp Ser Ser Ser Thr Pro Ser Val Gly Arg Val Ser Phe Ser  
 515 520 525  
 Phe Ser Leu Thr Glu Gly His Ser Gly Asn Tyr Tyr Cys Thr Ala Asp  
 530 535 540  
 Asn Gly Phe Gly Pro Gln Arg Ser Glu Val Val Ser Leu Phe Val Thr  
 545 550 555 560  
 Val Pro Val Ser Arg Pro Ile Leu Thr Leu Arg Val Pro Arg Ala Gln  
 565 570 575  
 Ala Val Val Gly Asp Leu Leu Glu Leu His Cys Glu Ala Pro Arg Gly  
 580 585 590  
 Ser Pro Pro Ile Leu Tyr Trp Phe Tyr His Glu Asp Val Thr Leu Gly  
 595 600 605  
 Ser Ser Ser Ala Pro Ser Gly Gly Glu Ala Ser Phe Asn Leu Ser Leu  
 610 615 620  
 Thr Ala Glu His Ser Gly Asn Tyr Ser Cys Glu Ala Asn Asn Gly Leu  
 625 630 635 640

Val Ala Gln His Ser Asp Thr Ile Ser Leu Ser Val Ile Val Pro Val  
645 650 655

Ser Arg Pro Ile Leu Thr Phe Arg Ala Pro Arg Ala Gln Ala Val Val  
660 665 670

Gly Asp Leu Leu Glu Leu His Cys Glu Ala Leu Arg Gly Ser Ser Pro  
675 680 685

Ile Leu Tyr Trp Phe Tyr His Glu Asp Val Thr Leu Gly Lys Ile Ser  
690 695 700

Ala Pro Ser Gly Gly Gly Ala Ser Phe Asn Leu Ser Leu Thr Thr Glu  
705 710 715 720

His Ser Gly Ile Tyr Ser Cys Glu Ala Asp Asn Gly Leu Glu Ala Gln  
725 730 735

Arg Ser Glu Met Val Thr Leu Lys Val Ala Val Pro Val Ser Arg Pro  
740 745 750

Val Leu Thr Leu Arg Ala Pro Gly Thr His Ala Ala Val Gly Asp Leu  
755 760 765

Leu Thr Glu Leu His Cys Glu Ala Leu Arg Gly Ser Pro Leu Ile Leu  
770 775 780

Tyr Arg Phe Phe His Glu Asp Val Thr Leu Gly Asn Glu Leu His Cys  
785 790 795 800

Glu Ala Leu Arg Gly Ser Pro Leu Ile Leu Tyr Arg Phe Phe His Glu  
805 810 815

Asp Val Thr Leu Gly Asn Asn Gly Leu Gly Ala Gln Arg Ser Glu Thr  
820 825 830

Val Thr Leu Tyr Ile Thr Gly Leu Thr Ala Asn Arg Ser Gly Pro Phe  
835 840 845

Ala Thr Gly Val Ala Gly Gly Leu Leu Ser Ile Ala Gly Leu Ala Ala  
850 855 860

Gly Ala Leu Leu Leu Tyr Cys Trp Leu Ser Arg Lys Ala Gly Arg Lys  
865 870 875 880

Pro Ala Ser Asp Pro Ala Arg Ser Pro Ser Asp Ser Asp Ser Gln Glu  
885 890 895

Pro Thr Tyr His Met Val Pro Ala Trp Glu Glu Leu Gln Pro Val Tyr  
900 905 910

Thr Asn Ala Asn Pro Arg Gly Glu Asn Val Val Tyr Ser Glu Val Arg  
915 920 925

Ile Ile Gln Glu Lys Lys Lys His Ala Val Ala Ser Asp Pro Arg His  
930 935 940

Leu Arg Asn Lys Gly Ser Pro Ile Ile Tyr Ser Glu Val Lys Val Ala  
945 950 955 960

Ser Thr Pro Val Ser Gly Ser Leu Phe Leu Ala Ser Ser Ala Pro His  
965 970 975

Arg

<210> 22  
<211> 88  
<212> PRT  
<213> Homo Sapiens

<400> 22

Met Leu Leu Trp Ala Ser Leu Leu Ala Phe Ala Pro Val Cys Gly Gln  
1 5 10 15

Ser Gly Ser Cys Ser Val Ala Asp Trp Gln Met Pro Pro Pro Tyr Val  
20 25 30

Val Leu Asp Leu Pro Gln Glu Thr Leu Glu Glu Glu Thr Pro Gly Ala  
35 40 45

Asn Leu Trp Pro Thr Thr Ile Thr Phe Leu Thr Leu Phe Leu Leu Ser  
50 55 60

Leu Phe Tyr Ser Thr Ala Leu Thr Val Thr Ser Val Arg Gly Pro Ser  
65 70 75 80

Gly Asn Arg Glu Gly Pro Gln Tyr  
85

<210> 23  
 <211> 837  
 <212> DNA  
 <213> Homo Sapiens

<400> 23  
 ctcaatcagc tttatgcaga gaagaagctt actgagctca ctgctggtgc tgggtgtaggc 60  
 aagtgctgct ttggcaatct gggctgacct ggcttgcttc ctcagaactc cttctccaac 120  
 cctggagcag gcttccatgc tgctgtgggc gtccttgctg gcctttgctc cagtctgtgg 180  
 acaatctggc tcttgctctg ttgcagattg gcagatgccg cctccctatg tgggtgctgga 240  
 cttgccgcag gagaccctgg aggaggagac ccccgccgcc aacctgtggc ccaccaccat 300  
 caccttcctc accctcttcc tgctgagcct gttctatagc acagcactga ccgtgaccag 360  
 cgtccggggc ccatctggca acagggaggg cccccagtac tgagcgggag ccggcaaggc 420  
 acaggtggga gccagggagg gggatgagcc cacagtggat gaggtgggct gcagtgcttg 480  
 gctaagagga gagcaccacc tgctccact gtggggggac gtgctctcct gggggggcct 540  
 tcacagacac tgaggacacg cgcaggccca gggtcagggc tgagcttccc tccagtgcag 600  
 taacgaggat tccgtccagg ctcccatgag caggccaggg ctgagacaga gggcgttggc 660  
 aaggatgctg ctcttcaggc tgtgaccct ctgtctttgc agggaggaag tgtggaggaa 720  
 cctcttgag aagccagcta tgcttgccag aactcagccc tttcagacgt caccgacctg 780  
 cccttactca catgccttcc aggtgcaata aagtggcccc aaggaaaaaa aaaaaaa 837

<210> 24  
 <211> 90  
 <212> DNA  
 <213> Homo Sapiens

<400> 24  
 tcccactgac gcatgcagga aggggcacct ccccttaacc acactgctct gtacggggca 60  
 cgtgggcaca ggtgcacact cacactcaca 90

<210> 25  
 <211> 89  
 <212> DNA  
 <213> Homo Sapiens

<400> 25  
 ggcttgacag caacttttct tctactagtt catcttaaca cactgctctg tacggggcac 60  
 gtgggcacag gtgcacactc acactcaca 89

<210> 26  
 <211> 89  
 <212> DNA  
 <213> Homo Sapiens

<400> 26  
 ggctgacag caacttttct tctactagtt catcttaact ttatcctggt aactggcgag 60  
 acaacctgtc ttaagtaact gaagggaaa 89

<210> 27  
 <211> 77  
 <212> DNA  
 <213> Homo Sapiens

<400> 27  
 tcccactgac gcaggaagga tcttaagttt atcctggtaa ctggcgagac aacctgtctt 60  
 aagtaactga agggaaa 77

<210> 28  
 <211> 200  
 <212> PRT  
 <213> Homo Sapiens

<400> 28

Met Ala Met Glu Thr Gln Met Ser Gln Asn Val Cys Pro Arg Asn Leu  
 1 5 10 15

Trp Leu Leu Gln Pro Leu Thr Val Leu Leu Leu Ala Ser Ala Asp  
 20 25 30

Ser Gln Ala Ala Ala Pro Pro Lys Ala Val Leu Lys Leu Glu Pro Pro  
 35 40 45

Trp Ile Asn Val Leu Gln Glu Asp Ser Val Thr Leu Thr Cys Cys Gly  
 50 55 60

Ala Arg Ser Pro Glu Ser Pro Ser Ile Gln Trp Phe His His Asn Gly  
 65 70 75 80

Asn Leu Ile Pro Ile His Thr Gln Ser Ser Tyr Arg Phe Lys Ala Asn  
 85 90 95

Asn Asn Asp Ser Gly Glu Tyr Thr Cys Gln Thr Gly Gln Thr Ser Leu  
 100 105 110

Ser Asp Pro Val His Leu Thr Val Leu Ser Glu Trp Leu Leu Leu Gln  
 115 120 125

Thr Pro His Leu Glu Phe Gln Glu Gly Glu Thr Ile Asn Leu Arg Cys  
 130 135 140

His Ser Trp Lys Asp Lys Pro Leu Val Lys Val Thr Glu Glu Gln Asn  
 145 150 155 160

Gly Lys Ser Gln Lys Phe Ser Arg Leu Asp Pro Thr Phe Ser Ile Pro  
 165 170 175

Gln Ala Asn His Ser His Ser Gly Asp Tyr His Cys Thr Gly Asn Cys  
 180 185 190

Gly Tyr Thr Leu Phe Ser Ser Lys  
 195 200

<210> 29  
 <211> 184  
 <212> PRT  
 <213> Homo Sapiens

<400> 29

Met Trp Gln Leu Leu Leu Pro Thr Ala Leu Leu Leu Leu Val Ser Ala  
 1 5 10 15

Gly Met Arg Thr Glu Asp Leu Pro Lys Ala Val Val Phe Leu Glu Pro  
 20 25 30

Gln Trp Tyr Arg Val Leu Glu Lys Asp Ser Val Thr Leu Lys Cys Cys  
 35 40 45

Gly Ala Tyr Ser Pro Glu Leu Asn Ser Thr Gln Trp Phe His Asn Glu  
 50 55 60

Ser Leu Ile Ser Glu Gln Ala Ser Ser Tyr Phe Ile Asp Ala Ala Thr  
 65 70 75 80

Val Asp Asp Ser Gly Glu Tyr Arg Cys Gln Thr Asn Leu Ser Thr Leu  
 85 90 95

Ser Asp Pro Val Gln Leu Glu Val His Ile Gly Trp Leu Leu Leu Gln  
 100 105 110

Ala Pro Arg Trp Val Phe Lys Glu Glu Asp Pro Ile His Leu Arg Cys  
 115 120 125



His Ser Trp Lys Asn Thr Ala Leu His Lys Val Thr Tyr Leu Gln Asn  
 130 135 140

Gly Lys Gly Arg Lys Tyr Phe His His Asn Ser Asp Phe Tyr Ile Pro  
 145 150 155 160

Gln Ala Thr Leu Lys Asp Ser Gly Ser Tyr Phe Cys Arg Gly Leu Phe  
 165 170 175

Gly Ser Lys Asn Val Ser Ser Glu  
 180

<210> 30  
 <211> 188  
 <212> PRT  
 <213> Homo Sapiens

<400> 30

Met Ala Pro Ala Met Glu Ser Pro Thr Leu Leu Cys Val Ala Leu Leu  
 1 5 10 15

Phe Phe Ala Asp Asp Gly Val Leu Ala Val Pro Gln Lys Pro Lys Val  
 20 25 30

Ser Leu Asn Pro Pro Trp Asn Arg Ile Phe Lys Gly Glu Asn Val Thr  
 35 40 45

Leu Thr Cys Asn Gly Asn Asn Phe Phe Glu Val Ser Ser Thr Lys Trp  
 50 55 60

Phe His Asn Gly Ser Leu Ser Glu Ser Thr Asn Ser Ser Leu Asn Ile  
 65 70 75 80

Val Asn Ala Lys Phe Glu Asp Ser Gly Glu Tyr Lys Cys Gln His Gln  
 85 90 95

Gln Val Asn Glu Ser Glu Pro Val Tyr Leu Glu Val Phe Ser Asp Trp  
 100 105 110

Leu Leu Leu Gln Ala Ser Ala Glu Val Val Met Glu Gly Gln Pro Leu  
 115 120 125

Phe Leu Arg Cys His Gly Trp Arg Asn Trp Pro Val Tyr Lys Val Ile  
 130 135 140

Tyr Tyr Lys Asp Gly Glu Ala Leu Lys Tyr Trp Tyr Glu Asn His Asn  
 145 150 155 160

Ile Ser Ile Thr Asn Ala Thr Val Glu Asp Ser Gly Thr Tyr Tyr Cys  
 165 170 175

Thr Gly Lys Val Trp Gln Leu Asp Tyr Glu Ser Glu  
 180 185

<210> 31  
 <211> 378  
 <212> PRT  
 <213> Homo Sapiens

<400> 31

Met Trp Phe Leu Thr Thr Leu Leu Leu Trp Val Pro Val Asp Gly Gln  
 1 5 10 15

Val Asp Thr Thr Lys Ala Val Ile Ser Leu Gln Pro Pro Trp Val Ser  
 20 25 30

Phe Val Gln Glu Glu Thr Val Thr Leu His Cys Glu Val Leu His Leu  
 35 40 45

Pro Gly Ser Ser Ser Thr Gln Trp Phe Leu Asn Gly Thr Ala Thr Gln  
 50 55 60

Thr Ser Thr Pro Ser Tyr Arg Ile Thr Ser Ala Ser Val Asn Asp Ser  
 65 70 75 80

Gly Glu Tyr Arg Cys Gln Arg Gly Leu Ser Gly Arg Ser Asp Pro Thr  
 85 90 95

Trp Leu Glu Thr His Arg Gly Trp Leu Leu Leu Gln Tyr Ser Ser Arg  
 100 105 110

Val Phe Thr Glu Gly Glu Pro Leu Ala Leu Arg Cys His Ala Trp Lys  
 115 120 125

Asp Lys Leu Val Tyr Asn Val Leu Tyr Tyr Arg Asn Gly Lys Ala Phe  
 130 135 140

Lys Phe Phe His Trp Asn Ser Asn Leu Ile Ile Leu Lys Ile Asn Ile  
 145 150 155 160

Ser Ser His Asn Gly Thr Tyr His Cys Ser Gly Asn Gly Lys His Arg  
165 170 175

Tyr Thr Ser Ala Gly Lys His Arg Tyr Thr Ser Ala Gly Ile Ser Val  
180 185 190

Thr Val Lys Glu Leu Phe Pro Ala Pro Val Leu Asn Ala Ser Val Thr  
195 200 205

Ser Pro Leu Leu Glu Gly Asn Leu Val Thr Leu Ser Cys Glu Thr Lys  
210 215 220

Leu Leu Leu Gln Arg Pro Gly Leu Gln Leu Tyr Phe Ser Phe Tyr Met  
225 230 235 240

Gly Ser Leu Thr Leu Arg Gly Arg Asn Thr Ser Ser Glu Tyr Gln Ile  
245 250 255

Leu Thr Ala Arg Arg Glu Asp Ser Gly Leu Tyr Trp Cys Glu Ala Ala  
260 265 270

Thr Glu Asp Gly Asn Val Leu Lys Arg Ser Pro Glu Leu Glu Leu Gln  
275 280 285

Val Leu Gly Leu Gln Leu Pro Thr Pro Val Val Trp Phe His Val Leu  
290 295 300

Gly Tyr Leu Ala Val Gly Ile Met Phe Leu Val Asn Thr Val Leu Trp  
305 310 315 320

Val Val Thr Ile Arg Lys Glu Leu Lys Arg Lys Lys Lys Trp Asp Leu  
325 330 335

Glu Ile Ser Leu Asp Ser Gly His Glu Lys Lys Val Thr Ser Ser Leu  
340 345 350

Gln Glu Asp Arg His Glu Glu Glu Glu Leu Lys Cys Gln Glu Gln Lys  
355 360 365

Gly Glu Gln Leu Gln Glu Gly Val His Arg  
370 375

<210> 32

<211> 376  
<212> PRT  
<213> Homo Sapiens

<400> 32

Met Leu Leu Trp Ala Ser Leu Leu Ala Phe Ala Pro Val Cys Gly Gln  
1 5 10 15

Ser Ala Ala Ala His Lys Pro Val Ile Ser Val His Pro Pro Trp Thr  
20 25 30

Thr Phe Phe Lys Gly Glu Arg Val Thr Leu Thr Cys Asn Gly Phe Gln  
35 40 45

Phe Tyr Ala Thr Glu Lys Thr Thr Trp Tyr His Arg His Tyr Trp Gly  
50 55 60

Glu Lys Leu Thr Leu Thr Pro Gly Asn Thr Leu Glu Val Arg Ala Ser  
65 70 75 80

Gly Leu Tyr Arg Cys Gln Ala Arg Gly Ser Pro Arg Ser Asn Pro Val  
85 90 95

Arg Leu Leu Phe Ser Ser Asp Ser Leu Ile Leu Gln Ala Pro Tyr Ser  
100 105 110

Val Phe Glu Gly Asp Thr Leu Val Leu Arg Cys His Arg Arg Arg Lys  
115 120 125

Glu Lys Leu Thr Ala Val Lys Tyr Thr Trp Asn Gly Asn Ile Leu Ser  
130 135 140

Ile Ser Asn Lys Ser Trp Asp Leu Leu Ile Pro Gln Ala Ser Ser Asn  
145 150 155 160

Asn Asn Gly Asn Tyr Arg Cys Ile Gly Tyr Gly Val Glu Asn Asp Val  
165 170 175

Phe Arg Ser Asn Gly Asp Glu Asn Asp Val Phe Arg Ser Asn Phe Lys  
180 185 190

Ile Ile Lys Ile Gln Glu Leu Phe Pro His Pro Glu Leu Lys Ala Thr  
195 200 205

Asp Ser Gln Pro Thr Glu Gly Asn Ser Val Asn Leu Ser Cys Glu Thr  
52

210	215	220
Gln Leu Pro Pro Glu Arg Ser Asp Thr Pro Leu His Phe Asn Phe Phe		
225	230	235 240
Arg Asp Gly Glu Val Ile Leu Ser Asp Trp Ser Thr Tyr Pro Glu Leu		
	245	250 255
Gln Leu Pro Thr Val Trp Arg Glu Asn Ser Gly Ser Tyr Trp Cys Gly		
	260	265 270
Ala Glu Thr Val Arg Gly Asn Ile His Lys His Ser Pro Ser Leu Gln		
	275	280 285
Ile His Val Gln Arg Ile Pro Val Ser Gly Val Leu Leu Glu Thr Gln		
	290	295 300
Pro Ser Gly Gly Gln Ala Val Glu Gln Glu Met Leu Val Leu Val Cys		
305	310	315 320
Ser Val Ala Glu Gly Thr Gly Asp Thr Thr Phe Ser Trp His Arg Glu		
	325	330 335
Asp Met Gln Glu Ser Leu Gly Arg Lys Thr Gln Arg Ser Leu Arg Ala		
	340	345 350
Glu Leu Glu Leu Pro Ala Ile Arg Gln Ser His Ala Gly Gly Tyr Tyr		
	355	360 365
Cys Thr Ala Asp Asn Ser Tyr Gly		
370	375	

<210> 33  
 <211> 373  
 <212> PRT  
 <213> Homo Sapiens

<400> 33

Met Leu Leu Trp Val Ile Leu Leu Val Leu Ala Pro Val Ser Gly Gln
1 5 10 15
Phe Ala Arg Thr Pro Arg Pro Ile Ile Phe Leu Gln Pro Pro Trp Thr
20 25 30
Thr Val Phe Gln Gly Glu Arg Val Thr Leu Thr Cys Lys Gly Phe Arg
53

35	40	45																	
Phe	Tyr	Ser	Pro	Gln	Arg	Thr	Arg	Trp	Tyr	His	Arg	Tyr	Leu	Gly	Lys				
50						55					60								
Glu	Ile	Leu	Arg	Glu	Thr	Pro	Asp	Asn	Ile	Leu	Glu	Val	Gln	Glu	Ser				
65					70					75					80				
Gly	Glu	Tyr	Arg	Cys	Gln	Ala	Gln	Gly	Ser	Pro	Leu	Ser	Ser	Pro	Val				
				85					90					95					
His	Leu	Asp	Phe	Ser	Ser	Ala	Ser	Leu	Ile	Leu	Gln	Ala	Pro	Leu	Ser				
			100					105					110						
Val	Phe	Glu	Gly	Asp	Ser	Val	Val	Leu	Arg	Cys	Arg	Ala	Lys	Ala	Glu				
		115					120					125							
Val	Thr	Leu	Asn	Asn	Thr	Ile	Tyr	Lys	Asn	Asp	Asn	Val	Leu	Ala	Phe				
	130					135					140								
Leu	Asn	Lys	Arg	Thr	Asp	Phe	His	Ile	Pro	His	Ala	Cys	Leu	Lys	Asp				
145					150					155					160				
Asn	Gly	Ala	Tyr	Arg	Cys	Thr	Gly	Tyr	Lys	Glu	Ser	Cys	Cys	Pro	Val				
				165					170					175					
Ser	Ser	Asn	Lys	Glu	Ser	Cys	Cys	Pro	Val	Ser	Ser	Asn	Thr	Val	Lys				
			180					185					190						
Ile	Gln	Val	Gln	Glu	Pro	Phe	Thr	Arg	Pro	Val	Leu	Arg	Ala	Ser	Ser				
		195					200					205							
Phe	Gln	Pro	Thr	Ser	Gly	Asn	Pro	Val	Thr	Leu	Thr	Cys	Glu	Thr	Gln				
	210					215					220								
Leu	Ser	Leu	Glu	Arg	Ser	Asp	Val	Pro	Leu	Arg	Phe	Arg	Phe	Phe	Arg				
225					230					235					240				
Asp	Asp	Gln	Thr	Leu	Gly	Leu	Gly	Trp	Ser	Leu	Ser	Pro	Asn	Phe	Gln				
				245					250					255					
Ile	Thr	Ala	Met	Trp	Ser	Lys	Asp	Ser	Gly	Phe	Tyr	Trp	Cys	Lys	Ala				
			260					265					270						

Ala Thr Met Pro His Ser Val Ile Ser Asp Ser Pro Arg Ser Trp Ile  
 275 280 285

Gln Val Gln Ile Pro Ala Ser His Pro Val Leu Thr Leu Ser Pro Glu  
 290 295 300

Lys Ala Leu Asn Phe Glu Gly Thr Lys Val Thr Leu His Cys Glu Thr  
 305 310 315 320

Gln Glu Asp Ser Leu Arg Thr Leu Tyr Arg Phe Tyr His Glu Gly Val  
 325 330 335

Pro Leu Arg His Lys Ser Val Arg Cys Glu Arg Gly Ala Ser Ile Ser  
 340 345 350

Phe Ser Leu Thr Thr Glu Asn Ser Gly Asn Tyr Tyr Cys Thr Ala Asp  
 355 360 365

Asn Gly Leu Gly Ala  
 370

<210> 34  
 <211> 26  
 <212> PRT  
 <213> Homo Sapiens

<220>  
 <221> MISC\_FEATURE  
 <222> (2)..(8)  
 <223> Xaa = Any amino acid

<220>  
 <221> MISC\_FEATURE  
 <222> (26)..(26)  
 <223> Xaa = I or L

<220>  
 <221> MISC\_FEATURE  
 <222> (15)..(15)  
 <223> Xaa = I or L

<220>  
 <221> MISC\_FEATURE  
 <222> (9)..(9)  
 <223> Xaa = D or E

<220>  
 <221> MISC\_FEATURE

<222> (1)..(1)  
<223> Xaa = D or E

<220>  
<221> MISC\_FEATURE  
<222> (10)..(11)  
<223> Xaa = Any amino acid

<220>  
<221> MISC\_FEATURE  
<222> (13)..(14)  
<223> Xaa = Any amino acid

<220>  
<221> MISC\_FEATURE  
<222> (16)..(22)  
<223> Xaa = Any amino acid

<220>  
<221> MISC\_FEATURE  
<222> (24)..(25)  
<223> Xaa = Any amino acid

<400> 34

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Tyr Xaa Xaa Xaa Xaa  
1 5 10 15

Xaa Xaa Xaa Xaa Xaa Xaa Tyr Xaa Xaa Xaa  
20 25

<210> 35  
<211> 63  
<212> PRT  
<213> Homo Sapiens

<400> 35

Glu Ser Ser His Ser Ile Cys Pro Ala Gln Val Glu Leu Gln Ser Leu  
1 5 10 15

Tyr Val Asp Val His Pro Lys Lys Gly Asp Leu Val Tyr Ser Glu Ile  
20 25 30

Gln Thr Thr Thr Leu Gly Glu Glu Glu Glu Glu Ala Asn Thr Ser Arg  
35 40 45

Thr Leu Leu Glu Asp Lys Asp Val Ser Val Val Tyr Ser Glu Val  
50 55 60



<210> 36  
 <211> 39  
 <212> PRT  
 <213> Homo Sapiens

<400> 36

Asp Asn Lys Glu Pro Leu Asn Ser Asp Val Gln Tyr Thr Glu Val Gln  
 1 5 10 15

Val Ser Ser Ala Glu Trp Ser His Lys Asp Leu Gly Lys Lys Asp Thr  
 20 25 30

Glu Thr Val Tyr Ser Glu Val  
 35

<210> 37  
 <211> 68  
 <212> PRT  
 <213> Homo Sapiens

<220>  
 <221> MISC\_FEATURE  
 <222> (38)..(61)  
 <223> Xaa = Any amino acid

<400> 37

Asp Ser Asp Ser Gln Glu Pro Thr Tyr His Asn Val Pro Ala Trp Glu  
 1 5 10 15

Glu Leu Gln Pro Val Tyr Thr Asn Ala Asn Pro Arg Gly Glu Asn Val  
 20 25 30

Val Tyr Ser Glu Val Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
 35 40 45

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
 50 55 60

Ser Glu Val Lys  
 65

<210> 38  
 <211> 65  
 <212> PRT  
 <213> Homo Sapiens

<220>  
 <221> MISC\_FEATURE  
 <222> (38)..(58)  
 <223> Xaa = Any amino acid

<400> 38

Ala Ser Asp Gln Arg Asp Leu Thr Glu His Lys Pro Ser Val Ser Asn  
 1 5 10 15

His Thr Gln Asp His Ser Asn Asp Pro Pro Asn Lys Met Asn Glu Val  
 20 25 30

Thr Tyr Ser Thr Leu Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
 35 40 45

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Ile Ile Tyr Ser Glu Val  
 50 55 60

Lys  
 65

<210> 39  
 <211> 6  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Immune-receptor Tyrosine-based Inhibition Motif

<220>  
 <221> MISC\_FEATURE  
 <222> (1)..(1)  
 <223> Xaa = S, V, L or I

<220>  
 <221> MISC\_FEATURE  
 <222> (2)..(2)  
 <223> Xaa = any amino acid

<220>  
 <221> MISC\_FEATURE  
 <222> (4)..(5)  
 <223> Xaa = any amino acid

<220>  
 <221> MISC\_FEATURE  
 <222> (6)..(6)  
 <223> Xaa = L or V

<400> 39

Xaa Xaa Tyr Xaa Xaa Xaa  
1 5

<210> 40

<211> 5321

<212> DNA

<213> HOMO SAPIENS

<400> 40

```
gtgcagtgtc ctgactgtaa gatcaagtcc aaacctgttt tggaattgag gaaacttctc      60
ttttgatctc agcccttggg ggtccagggtc ttcattgctgc tgtgggtgat attactgggtc    120
ctggctcctg tcagtggaca gtttgcaagg acaccagggtc ccattatctt cctccagcct      180
ccatggacca cagtcttcca aggagagaga gtgaccctca cttgcaagggt atttcgcttc      240
tactcaccac agaaaacaaa atggtaccat cggtagcttg ggaaagaaat actaagagaa      300
accccagaca atatccttga ggttcaggaa tctggagagt acagatgccg ggcccagggtc      360
tcccctctca gtagccctgt gcacttggat ttttcttcag cttcgctgat cctgcaagct      420
ccactttctg tgtttgaagg agactctgtg gttctgaggt gccgggcaaa ggcggaagta      480
acactgaata atactattta caagaatgat aatgtcctgg cattccttaa taaaagaact      540
gacttccata ttctcatgac atgtctcaag gacaatgggt catatcgctg tactggatat      600
aaggaaagtt gttgccctgt ttcttccaat acagtcaaaa tccaagtcca agagccattt      660
acacgtccag tgctgagagc cagctccttc cagcccatca gcgggaacct agtgaccctg      720
acctgtgaga ccagctcttc tctagagagg tcagatgtcc cgctccggtt ccgcttcttc      780
agagatgacc agaccctggg attaggctgg agtctctccc cgaatttcca gattactgcc      840
atgtggagta aagattcagg gttctactgg tgtaaggcag caacaatgcc tcacagcgtc      900
atatctgaca gcccgagatc ctggatacag gtgcagatcc ctgcatctca tcctgtcctc      960
actctcagcc ctgaaaaggc tctgaatttt gagggaaacca aggtgacact tcactgtgaa    1020
accaggaag attctctgcg cactttgtac aggttttatc atgaggggtg cccctgagg      1080
cacaagtcag tccgctgtga aaggggagca tccatcagct tctcactgac tacagagaat      1140
tcagggaact actactgcac agctgacaat ggccttggcg ccaagcccag taaggctgtg      1200
agcctctcag tcactgttcc cgtgtctcat cctgtctcca acctcagctc tcctgaggac      1260
ctgatttttg agggagccaa ggtgacactt cactgtgaag cccagagagg ttactcccc      1320
atcctgtacc agtttcatca tgaggatgct gccctggagc gtaggtcggc caactctgca      1380
```

ggaggagtgg	ccatcagctt	ctctctgact	gcagagcatt	cagggaacta	ctactgcaca	1440
gctgacaatg	gctttggccc	ccagcgagct	aaggcggtga	gcctctccat	cactgtccct	1500
gtgtctcatc	ctgtcctcac	cctcagctct	gctgaggccc	tgacttttga	aggagccact	1560
gtgacacttc	actgtgaagt	ccagagaggt	tccccacaaa	tcctatacca	gttttatcat	1620
gaggacatgc	ccctgtggag	cagctcaaca	ccctctgtgg	gaagagtgtc	cttcagcttc	1680
tctctgactg	aaggacattc	aggggaattac	tactgcacag	ctgacaatgg	ctttgggtccc	1740
cagcgagctg	aagtgggtgag	cctttttgtc	actgttccag	tgtctcgccc	catectcacc	1800
ctcagggttc	ccagggccca	ggctgtgggtg	ggggacctgc	tggagcttca	ctgtgaggcc	1860
ccgagaggct	ctcccccaat	cctgtactgg	ttttatcatg	aggatgtcac	cctggggagc	1920
agctcagccc	cctctggagg	agaagcttct	ttcaacctct	ctctgactgc	agaacattct	1980
ggaaactact	catgtgaggc	caacaatggc	ctagtggccc	agcacagtga	cacaatatca	2040
ctcagtgtta	tagttccagt	atctcgtccc	atcctcacct	tcagggctcc	cagggtcccag	2100
gctgtggtgg	gggacctgct	ggagcttcac	tgtgaggccc	tgagaggctc	ctccccaatc	2160
ctgtactggt	tttatcatga	agatgtcacc	ctgggtaaga	tctcagcccc	ctctggagga	2220
ggggcctcct	tcaacctctc	tctgactaca	gaacattctg	gaatctactc	ctgtgaggca	2280
gacaatggtc	tggaggccca	gcgcagtgag	atggtgacac	tgaaagttgc	agttccggtg	2340
tctcgccogg	tcctcaccct	cagggtctcc	gggacctatg	ctgcggtggg	ggacctgctg	2400
gagcttcaact	gtgaggccct	gagaggctct	cccctgatcc	tgtaccggtt	ttttcatgag	2460
gatgtcacc	taggaaatag	gtcgtcccc	tctggaggag	cgtccttaaa	cctctctctg	2520
actgcagagc	actctggaaa	ctactcctgt	gaggccgaca	atggcctcgg	ggcccagcgc	2580
agtgagacag	tgacacttta	tatcacaggg	ctgaccgcga	acagaagtgg	cccttttgcc	2640
acaggagtgc	ccgggggcct	gctcagcata	gcaggccttg	ctgcgggggc	actgctgctc	2700
tactgctggc	tctcgagaaa	agcagggaga	aagcctgcct	ctgaccccg	caggagccct	2760
tcagactcgg	actcccaaga	gccacctat	cacaatgtac	cagcctggga	agagctgcaa	2820
ccagtgtaca	ctaatacaaa	tcctagagga	gaaaatgtgg	tttactcaga	agtacggatc	2880
atccaagaga	aaaagaaaca	tgagtggtgc	tctgacccca	ggcatctcag	gaacaagggt	2940
tccccatatc	tctactctga	agttaagggtg	gcgtcaaccc	cggtttccgg	atccctgttc	3000
ttggcttcct	cagctcctca	cagatgagtc	cacacgtctc	tccaactgct	gtttcagcct	3060
ctgcacccca	aagttccctt	tgggggagaa	gcagcattga	agtgggaaga	tttaggctgc	3120
cccagaccat	atctactggc	ctttgtttca	catgtcctca	ttctcagtct	gaccagaatg	3180

cagggccctg ctggactgtc acctgtttcc cagttaaagc cctgactggc aggtttttta	3240
atccagtggc aaggtgctcc cactccaggg cccagcacat ctcttgatt ccttagtggg	3300
cttcagctgt ggttgctgtt ctgagtactg ctctcatcac acccccacag agggggctct	3360
accacacaaa gggagagtgg gccttcagga gatgccgggc tggcctaaca gctcaggtgc	3420
tcctaaactc cgacacagag ttcttgcttt ggggtgatgc atttctcaat tgtcatcagc	3480
ctgggtggggc tactgcagtg tgctgcaaaa tgggacagca cacagcctgt gcacatggga	3540
catgtgatgg gtctccccac gggggctgca tttcacactc ctccacctgt ctcaaactct	3600
aaggtcggca cttgacacca aggtaacttc tctctgctc atgtgtcagt gtctacctgc	3660
ccaagtaagt ggctttcata caccaagtcc cgaagtctt cccatcctaa cagaagtaac	3720
ccagcaagtc aaggccagga ggaccagggg tgcagacaga acacatactg gaacacagga	3780
ggtgctcaat tactatttga ctgactgact gaatgaatga atgaatgagg aagaaaactg	3840
tgggtaatca aactggcata aaatccagtg cactccctag gaaatccggg aggtattctg	3900
gcttcctaag aaacaacgga agagaaggag cttggatgaa gaaactgttc agcaagaaga	3960
agggtctctt cacactttta tgtgcttggt gatcacctga ggatctgtga aaatacagat	4020
actgattcag tgggtctgtg tagagcctga gactgccatt ctaacatgtt cccaggggat	4080
gctgatgctg ctggccctgg gactgcactg catgcatgtg aagccctata ggtctcagca	4140
gaggcccatg gagagggaat gtgtggctct ggctgccag ggcccaactc ggttcacacg	4200
gatcgtgctg ctccctggcc agcctttggc cacagcacca ccagctgctg ttgctgagag	4260
agcttcttct ctgtgacatg ttggctttca tcagccaccc tgggaagcgg aaagtagctg	4320
ccactatctt tgtttcccca cctcaggcct cacactttcc catgaaaagg gtgaatgtat	4380
ataacctgag ccctctccat tcagagttgt tctcccatct ctgagcaatg ggatgttctg	4440
ttccgctttt atgatatcca tcacatctta tcttgatctt tgctcccagt ggattgtaca	4500
gtgatgactt ttaagcccca cgccctgaa ataaaatcct tccaagggca ttggaagctc	4560
actccacctg aacctaggct tttcatgctt ccaagtgtca gggccttgcc cagatagaca	4620
gggctgactc tgctgcccc aaccttcaag gaggaacca gacacctgag acaggagcct	4680
gtatgcagcc cagtgcagcc ttgcagagga caaggctgga ggcatttgct atcactacag	4740
atatgcaact aaaatagacg tggagcaaga gaaatgcatt cccaccgagg ccgctttttt	4800
aggcctagtt gaaagtcaag aaggacagca gcaagcatag gctcaggatt aaagaaaaaa	4860
atctgctcac agtctgttct ggaggtcaca tcaccaacaa agctcacgcc ctatgcagtt	4920

ctgagaaggt ggaggcacca ggctcaaaag aggaaattta gaatttctca ttgggagagt 4980  
 aaggtacccc catcccagaa tgataactgc acagtggcag aacaaactcc accctaattgt 5040  
 ggggtggaccc catccagtct gttgaaggcc tgaatgtaac aaaagggtt attcttcttc 5100  
 aagtaagggg gaactcctgc tttgggctgg gacataagtt tttctgcttt cagacgcaaa 5160  
 ctgaaaaatg gctcttcttg ggtcttgagc ttgctggcat atggactgaa agaaactatg 5220  
 ctattggatc tcctggatct ccagcttgct gactgcagat cttgagatat gtcagcctct 5280  
 acagtcacaa gagctaattc attctaataa accaatcttt c 5321

<210> 41  
 <211> 977  
 <212> PRT  
 <213> HOMO SAPIENS

<400> 41

Met Leu Leu Trp Val Ile Leu Leu Val Leu Ala Pro Val Ser Gly Gln  
 1 5 10 15

Phe Ala Arg Thr Pro Arg Pro Ile Ile Phe Leu Gln Pro Pro Trp Thr  
 20 25 30

Thr Val Phe Gln Gly Glu Arg Val Thr Leu Thr Cys Lys Gly Phe Arg  
 35 40 45

Phe Tyr Ser Pro Gln Lys Thr Lys Trp Tyr His Arg Tyr Leu Gly Lys  
 50 55 60

Glu Ile Leu Arg Glu Thr Pro Asp Asn Ile Leu Glu Val Gln Glu Ser  
 65 70 75 80

Gly Glu Tyr Arg Cys Gln Ala Gln Gly Ser Pro Leu Ser Ser Pro Val  
 85 90 95

His Leu Asp Phe Ser Ser Ala Ser Leu Ile Leu Gln Ala Pro Leu Ser  
 100 105 110

Val Phe Glu Gly Asp Ser Val Val Leu Arg Cys Arg Ala Lys Ala Glu  
 115 120 125

Val Thr Leu Asn Asn Thr Ile Tyr Lys Asn Asp Asn Val Leu Ala Phe  
 130 135 140

Leu Asn Lys Arg Thr Asp Phe His Ile Pro His Ala Cys Leu Lys Asp  
 62

145		150		155		160
Asn Gly Ala Tyr	Arg Cys Thr Gly Tyr	Lys Glu Ser Cys Cys	Pro Val			
	165	170	175			
Ser Ser Asn Thr	Val Lys Ile Gln Val	Gln Glu Pro Phe Thr	Arg Pro			
	180	185	190			
Val Leu Arg Ala	Ser Ser Phe Gln Pro	Ile Ser Gly Asn	Pro Val Thr			
	195	200	205			
Leu Thr Cys Glu	Thr Gln Leu Ser	Leu Glu Arg Ser	Asp Val Pro Leu			
	210	215	220			
Arg Phe Arg Phe	Phe Arg Asp Asp	Gln Thr Leu Gly	Leu Gly Trp Ser			
	225	230	235	240		
Leu Ser Pro Asn	Phe Gln Ile Thr	Ala Met Trp Ser	Lys Asp Ser Gly			
	245	250	255			
Phe Tyr Trp Cys	Lys Ala Ala Thr	Met Pro His Ser	Val Ile Ser Asp			
	260	265	270			
Ser Pro Arg Ser	Trp Ile Gln Val	Gln Ile Pro Ala	Ser His Pro Val			
	275	280	285			
Leu Thr Leu Ser	Pro Glu Lys Ala	Leu Asn Phe Glu	Gly Thr Lys Val			
	290	295	300			
Thr Leu His Cys	Glu Thr Gln Glu	Asp Ser Leu Arg	Thr Leu Tyr Arg			
	305	310	315	320		
Phe Tyr His Glu	Gly Val Pro Leu	Arg His Lys Ser	Val Arg Cys Glu			
	325	330	335			
Arg Gly Ala Ser	Ile Ser Phe Ser	Leu Thr Thr Glu	Asn Ser Gly Asn			
	340	345	350			
Tyr Tyr Cys Thr	Ala Asp Asn Gly	Leu Gly Ala Lys	Pro Ser Lys Ala			
	355	360	365			
Val Ser Leu Ser	Val Thr Val Pro	Val Ser His Pro	Val Leu Asn Leu			
	370	375	380			

Ser Ser Pro Glu Asp Leu Ile Phe Glu Gly Ala Lys Val Thr Leu His  
 385 390 395 400

Cys Glu Ala Gln Arg Gly Ser Leu Pro Ile Leu Tyr Gln Phe His His  
 405 410 415

Glu Asp Ala Ala Leu Glu Arg Arg Ser Ala Asn Ser Ala Gly Gly Val  
 420 425 430

Ala Ile Ser Phe Ser Leu Thr Ala Glu His Ser Gly Asn Tyr Tyr Cys  
 435 440 445

Thr Ala Asp Asn Gly Phe Gly Pro Gln Arg Ser Lys Ala Val Ser Leu  
 450 455 460

Ser Ile Thr Val Pro Val Ser His Pro Val Leu Thr Leu Ser Ser Ala  
 465 470 475 480

Glu Ala Leu Thr Phe Glu Gly Ala Thr Val Thr Leu His Cys Glu Val  
 485 490 495

Gln Arg Gly Ser Pro Gln Ile Leu Tyr Gln Phe Tyr His Glu Asp Met  
 500 505 510

Pro Leu Trp Ser Ser Ser Thr Pro Ser Val Gly Arg Val Ser Phe Ser  
 515 520 525

Phe Ser Leu Thr Glu Gly His Ser Gly Asn Tyr Tyr Cys Thr Ala Asp  
 530 535 540

Asn Gly Phe Gly Pro Gln Arg Ser Glu Val Val Ser Leu Phe Val Thr  
 545 550 555 560

Val Pro Val Ser Arg Pro Ile Leu Thr Leu Arg Val Pro Arg Ala Gln  
 565 570 575

Ala Val Val Gly Asp Leu Leu Glu Leu His Cys Glu Ala Pro Arg Gly  
 580 585 590

Ser Pro Pro Ile Leu Tyr Trp Phe Tyr His Glu Asp Val Thr Leu Gly  
 595 600 605

Ser Ser Ser Ala Pro Ser Gly Gly Glu Ala Ser Phe Asn Leu Ser Leu  
 610 615 620



Thr Ala Glu His Ser Gly Asn Tyr Ser Cys Glu Ala Asn Asn Gly Leu  
625 630 635 640

Val Ala Gln His Ser Asp Thr Ile Ser Leu Ser Val Ile Val Pro Val  
645 650 655

Ser Arg Pro Ile Leu Thr Phe Arg Ala Pro Arg Ala Gln Ala Val Val  
660 665 670

Gly Asp Leu Leu Glu Leu His Cys Glu Ala Leu Arg Gly Ser Ser Pro  
675 680 685

Ile Leu Tyr Trp Phe Tyr His Glu Asp Val Thr Leu Gly Lys Ile Ser  
690 695 700

Ala Pro Ser Gly Gly Gly Ala Ser Phe Asn Leu Ser Leu Thr Thr Glu  
705 710 715 720

His Ser Gly Ile Tyr Ser Cys Glu Ala Asp Asn Gly Leu Glu Ala Gln  
725 730 735

Arg Ser Glu Met Val Thr Leu Lys Val Ala Val Pro Val Ser Arg Pro  
740 745 750

Val Leu Thr Leu Arg Ala Pro Gly Thr His Ala Ala Val Gly Asp Leu  
755 760 765

Leu Glu Leu His Cys Glu Ala Leu Arg Gly Ser Pro Leu Ile Leu Tyr  
770 775 780

Arg Phe Phe His Glu Asp Val Thr Leu Gly Asn Arg Ser Ser Pro Ser  
785 790 795 800

Gly Gly Ala Ser Leu Asn Leu Ser Leu Thr Ala Glu His Ser Gly Asn  
805 810 815

Tyr Ser Cys Glu Ala Asp Asn Gly Leu Gly Ala Gln Arg Ser Glu Thr  
820 825 830

Val Thr Leu Tyr Ile Thr Gly Leu Thr Ala Asn Arg Ser Gly Pro Phe  
835 840 845

Ala Thr Gly Val Ala Gly Gly Leu Leu Ser Ile Ala Gly Leu Ala Ala  
850 855 860

Gly Ala Leu Leu Leu Tyr Cys Trp Leu Ser Arg Lys Ala Gly Arg Lys  
865 870 875 880

Pro Ala Ser Asp Pro Ala Arg Ser Pro Ser Asp Ser Asp Ser Gln Glu  
885 890 895

Pro Thr Tyr His Asn Val Pro Ala Trp Glu Glu Leu Gln Pro Val Tyr  
900 905 910

Thr Asn Ala Asn Pro Arg Gly Glu Asn Val Val Tyr Ser Glu Val Arg  
915 920 925

Ile Ile Gln Glu Lys Lys Lys His Ala Val Ala Ser Asp Pro Arg His  
930 935 940

Leu Arg Asn Lys Gly Ser Pro Ile Ile Tyr Ser Glu Val Lys Val Ala  
945 950 955 960

Ser Thr Pro Val Ser Gly Ser Leu Phe Leu Ala Ser Ser Ala Pro His  
965 970 975

Arg

<210> 42  
<211> 16  
<212> DNA  
<213> HOMO SAPIENS

<400> 42  
ggcacctccc cttaac 16

<210> 43  
<211> 2797  
<212> DNA  
<213> HOMO SAPIENS

<400> 43  
gtgcagtgtc ctgactgtaa gatcaagtcc aaacctgttt tggaattgag gaaacttctc 60  
ttttgatctc agcccttggt ggtccaggtc ttcattgctgc tgtgggtgat attactggtc 120  
ctggctcctg tcagtggaca gtttgcaagg acaccaggc ccattatctt cctccagcct 180  
ccatggacca cagtcttcca aggagagaga gtgaccctca cttgcaaggg atttcgcttc 240  
tactcaccac agaaaacaaa atggtacat cggtacctg ggaaagaaat actaagagaa 300

accccagaca atataccttga gggttcaggaa tctggagagt acagatgccca ggcccagggc	360
tcccctctca gtagccctgt gcacttggat tttcttcag cttcgctgat cctgcaagct	420
ccactttctg tgtttgaagg agactctgtg gttctgaggt gccgggcaaa ggcggaagta	480
acactgaata atactattta caagaatgat aatgtcctgg cattccttaa taaaagaact	540
gacttccata ttcctcatgc atgtctcaag gacaatgggt catatcgctg tactggatat	600
aaggaaagtt gttgccctgt ttcttccaat acagtcaaaa tccaagtcca agagccattt	660
acacgtccag tgctgagagc cagctccttc cagcccatca gccggaaccc agtgaccctg	720
acctgtgaga ccagctctc tctagagagg tcagatgtcc cgctccggtt ccgcttcttc	780
agagatgacc agaccctggg attaggctgg agtctctccc cgaatttcca gattactgcc	840
atgtggagta aagattcagg gttctactgg tgtaaggcag caacaatgcc tcacagcgtc	900
atatctgaca gcccagatc ctggatacag gtgcagatcc ctgcatctca tctgtcctc	960
actctcagcc ctgaaaaggc tctgaatttt gagggaaacca aggtgacact tcaactgtgaa	1020
accaggaag attctctgcg cactttgtac aggttttatc atgagggtgt cccctgagg	1080
cacaagtcag tccgctgtga aaggggagca tccatcagct tctcactgac tacagagaat	1140
tcaggaact actactgcac agctgacaat ggccttggcg ccaagcccag taaggctgtg	1200
agcctctcag tcaactgttc cgtgtctcat cctgtcctca acctcagctc tctgaggac	1260
ctgatttttg agggagccaa ggtgacactt cactgtgaag ccagagagg ttcactcccc	1320
atcctgtacc agtttcatca tgaggatgct gccctggagc gtaggtcggc caactctgca	1380
ggaggagtgg ccatcagctt ctctctgact gcagagcatt cagggaaacta ctactgcaca	1440
gctgacaatg gctttggccc ccagcgagc aaggcggtga gcctctccat cactgtccct	1500
gtgtctcatc ctgtcctcac cctcagctct gctgaggccc tgacttttga aggagccact	1560
gtgacacttc actgtgaagt ccagagaggt tccccacaaa tcctatacca gttttatcat	1620
gaggacatgc ccctgtggag cagctcaaca ccctctgtgg gaagagtgtc cttcagcttc	1680
tctctgactg aaggacattc aggaattac tactgcacag ctgacaatgg ctttggctcc	1740
cagcgagtg aagtgtgag cctttttgtc actgttccag tgtctcgccc catcctcacc	1800
ctcagggttc ccagggccca ggctgtgggt ggggacctgc tggagcttca ctgtgaggcc	1860
ccgagaggct ccccccaat cctgtactgg ttttatcatg aggatgtcac cctggggagc	1920
agctcagccc cctctggagg agaagcttct ttcaacctct ctctgactgc agaacattct	1980
ggaaactact catgtgaggc caacaatggc ctagtggccc agcacagtga cacaatatca	2040
ctcagtgtta tagttccagt atctcgctcc atcctcacct tcagggtccc cagggccag	2100

gctgtggtgg gggacctgct ggagcttcac tgtgaggccc tgagaggctc ctccccaatc 2160  
ctgtactggt tttatcatga agatgtcacc ctgggtaaga tctcagcccc ctctggagga 2220  
ggggcctcct tcaacctctc tctgactaca gaacattctg gaatctactc ctgtgaggca 2280  
gacaatgggc tggaggccca gcgcagtga atggtgacac tgaaagttgc aggtgagtgg 2340  
gccctgcccc ccagcagcac atctgagaac tgactgtgcc tgttctccct gcagctgaaa 2400  
atggagccac agagctcctc agggctgttt gcttgtgtgg catcccagca cacttctctg 2460  
ctgcagaacc tccctgtgaa agtctcggat cctttgtggt atggttccag gaatctgatg 2520  
tttcccagca gtcttcttga agatgatcaa agcacctcac taaaaatgca aataagactt 2580  
ttttagaaca taaactatat tctgaactga aattattaca tgaaaatgaa accaaagaat 2640  
tctgagcata tgtttctctg ccgtagaaaag gattaagctg tttcttgtcc ggattcttct 2700  
ctcattgact tctaagaagc ctctactctt gagtctcttt cattactggg gatgtaaatg 2760  
ttccttacat ttccacatta aaaatcctat gttaacg 2797

<210> 44  
<211> 759  
<212> PRT  
<213> HOMO SAPIENS

<400> 44

Met Leu Leu Trp Val Ile Leu Leu Val Leu Ala Pro Val Ser Gly Gln  
1 5 10 15

Phe Ala Arg Thr Pro Arg Pro Ile Ile Phe Leu Gln Pro Pro Trp Thr  
20 25 30

Thr Val Phe Gln Gly Glu Arg Val Thr Leu Thr Cys Lys Gly Phe Arg  
35 40 45

Phe Tyr Ser Pro Gln Lys Thr Lys Trp Tyr His Arg Tyr Leu Gly Lys  
50 55 60

Glu Ile Leu Arg Glu Thr Pro Asp Asn Ile Leu Glu Val Gln Glu Ser  
65 70 75 80

Gly Glu Tyr Arg Cys Gln Ala Gln Gly Ser Pro Leu Ser Ser Pro Val  
85 90 95

His Leu Asp Phe Ser Ser Ala Ser Leu Ile Leu Gln Ala Pro Leu Ser  
100 105 110

Val Phe Glu Gly Asp Ser Val Val Leu Arg Cys Arg Ala Lys Ala Glu  
115 120 125

Val Thr Leu Asn Asn Thr Ile Tyr Lys Asn Asp Asn Val Leu Ala Phe  
130 135 140

Leu Asn Lys Arg Thr Asp Phe His Ile Pro His Ala Cys Leu Lys Asp  
145 150 155 160

Asn Gly Ala Tyr Arg Cys Thr Gly Tyr Lys Glu Ser Cys Cys Pro Val  
165 170 175

Ser Ser Asn Thr Val Lys Ile Gln Val Gln Glu Pro Phe Thr Arg Pro  
180 185 190

Val Leu Arg Ala Ser Ser Phe Gln Pro Ile Ser Gly Asn Pro Val Thr  
195 200 205

Leu Thr Cys Glu Thr Gln Leu Ser Leu Glu Arg Ser Asp Val Pro Leu  
210 215 220

Arg Phe Arg Phe Phe Arg Asp Asp Gln Thr Leu Gly Leu Gly Trp Ser  
225 230 235 240

Leu Ser Pro Asn Phe Gln Ile Thr Ala Met Trp Ser Lys Asp Ser Gly  
245 250 255

Phe Tyr Trp Cys Lys Ala Ala Thr Met Pro His Ser Val Ile Ser Asp  
260 265 270

Ser Pro Arg Ser Trp Ile Gln Val Gln Ile Pro Ala Ser His Pro Val  
275 280 285

Leu Thr Leu Ser Pro Glu Lys Ala Leu Asn Phe Glu Gly Thr Lys Val  
290 295 300

Thr Leu His Cys Glu Thr Gln Glu Asp Ser Leu Arg Thr Leu Tyr Arg  
305 310 315 320

Phe Tyr His Glu Gly Val Pro Leu Arg His Lys Ser Val Arg Cys Glu  
325 330 335

Arg Gly Ala Ser Ile Ser Phe Ser Leu Thr Thr Glu Asn Ser Gly Asn  
69

	340		345		350										
Tyr	Tyr	Cys	Thr	Ala	Asp	Asn	Gly	Leu	Gly	Ala	Lys	Pro	Ser	Lys	Ala
	355						360					365			
Val	Ser	Leu	Ser	Val	Thr	Val	Pro	Val	Ser	His	Pro	Val	Leu	Asn	Leu
	370						375				380				
Ser	Ser	Pro	Glu	Asp	Leu	Ile	Phe	Glu	Gly	Ala	Lys	Val	Thr	Leu	His
385					390					395					400
Cys	Glu	Ala	Gln	Arg	Gly	Ser	Leu	Pro	Ile	Leu	Tyr	Gln	Phe	His	His
				405					410					415	
Glu	Asp	Ala	Ala	Leu	Glu	Arg	Arg	Ser	Ala	Asn	Ser	Ala	Gly	Gly	Val
			420					425					430		
Ala	Ile	Ser	Phe	Ser	Leu	Thr	Ala	Glu	His	Ser	Gly	Asn	Tyr	Tyr	Cys
	435						440					445			
Thr	Ala	Asp	Asn	Gly	Phe	Gly	Pro	Gln	Arg	Ser	Lys	Ala	Val	Ser	Leu
450						455					460				
Ser	Ile	Thr	Val	Pro	Val	Ser	His	Pro	Val	Leu	Thr	Leu	Ser	Ser	Ala
465					470					475					480
Glu	Ala	Leu	Thr	Phe	Glu	Gly	Ala	Thr	Val	Thr	Leu	His	Cys	Glu	Val
				485					490					495	
Gln	Arg	Gly	Ser	Pro	Gln	Ile	Leu	Tyr	Gln	Phe	Tyr	His	Glu	Asp	Met
			500					505					510		
Pro	Leu	Trp	Ser	Ser	Ser	Thr	Pro	Ser	Val	Gly	Arg	Val	Ser	Phe	Ser
	515						520					525			
Phe	Ser	Leu	Thr	Glu	Gly	His	Ser	Gly	Asn	Tyr	Tyr	Cys	Thr	Ala	Asp
	530					535					540				
Asn	Gly	Phe	Gly	Pro	Gln	Arg	Ser	Glu	Val	Val	Ser	Leu	Phe	Val	Thr
545					550					555					560
Val	Pro	Val	Ser	Arg	Pro	Ile	Leu	Thr	Leu	Arg	Val	Pro	Arg	Ala	Gln
				565					570					575	

Ala Val Val Gly Asp Leu Leu Glu Leu His Cys Glu Ala Pro Arg Gly  
580 585 590

Ser Pro Pro Ile Leu Tyr Trp Phe Tyr His Glu Asp Val Thr Leu Gly  
595 600 605

Ser Ser Ser Ala Pro Ser Gly Gly Glu Ala Ser Phe Asn Leu Ser Leu  
610 615 620

Thr Ala Glu His Ser Gly Asn Tyr Ser Cys Glu Ala Asn Asn Gly Leu  
625 630 635 640

Val Ala Gln His Ser Asp Thr Ile Ser Leu Ser Val Ile Val Pro Val  
645 650 655

Ser Arg Pro Ile Leu Thr Phe Arg Ala Pro Arg Ala Gln Ala Val Val  
660 665 670

Gly Asp Leu Leu Glu Leu His Cys Glu Ala Leu Arg Gly Ser Ser Pro  
675 680 685

Ile Leu Tyr Trp Phe Tyr His Glu Asp Val Thr Leu Gly Lys Ile Ser  
690 695 700

Ala Pro Ser Gly Gly Gly Ala Ser Phe Asn Leu Ser Leu Thr Thr Glu  
705 710 715 720

His Ser Gly Ile Tyr Ser Cys Glu Ala Asp Asn Gly Leu Glu Ala Gln  
725 730 735

Arg Ser Glu Met Val Thr Leu Lys Val Ala Gly Glu Trp Ala Leu Pro  
740 745 750

Thr Ser Ser Thr Ser Glu Asn  
755